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Original Communications.

*SOME UNSOLVED PROBLEMS IN MEDICINE AND SURGERY.**

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PROBLEM OF SYSTEMIZATION OF KNOWLEDGE.

The vast increase of our knowledge in both medicine and surgery during the past quarter century is so bewildering that I do not wonder that the student of to-day, even after a four years' course, feels himself quite at sea when he starts out into actual practice. He has been trained to examine the blood in order to make a diagnosis of malaria or anemia, he will not say whether a patient has typhoid or not until he has found the Widal reaction, and although he may find dulness in the chest and high temperature, crepitant râles and bronchial breathing, he is not willing to risk a diagnosis of pneumonia until a specimen has been sent to the laboratory and the pneumococcus has been discovered. Of course, he thinks it a waste of time to study the clinical appearances and symptoms of diphtheria when he can send a culture to

*An address delivered before the H. A. Hare Medical Society of the Jefferson Medical College of Philadelphia, Dec. 17, 1901.

the Board of Health and have the diagnosis made for him.

Far be it from me to under-estimate these valuable aids to diagnosis, but I merely wish to emphasize the importance of the clinical side of medicine and surgery, and to impress upon your minds the value of the older methods of determining the nature of disease. You will not all practice in large cities; many of you will be called to treat patients far from the laboratory and even from your own microscope, and you will have to make a diagnosis without their help, and you should, in most cases, be able to do so.

The same is true of surgery. Take, for example, the diagnosis of tumors. You should embrace every opportunity to study the character of every tumor you meet with. Look at it thoroughly, feel of it carefully, examine its relation to the overlying skin, whether adherent or not, find out whether it is attached to the deeper structures, ascertain its mobility, its consistence, its relation to bone or soft parts, and after you have done all these things and have also in a certain number of cases been able to find your diagnosis confirmed or disproved by the microscope, you will probably be surprised at your own knowledge and ability to make a diagnosis, and eventually will be able to follow the example of Sir William Hingsten, who stated at the Canadian Medical Society in 1898 that while he began in his early practice to write his diagnoses in pencil, for the last thirty years he had always written them in ink, and for many years has not had to use an eraser. But, above all things, do not spend too much time upon the rare diseases, though the textbooks often mislead you by the relative importance they give to new and rare operations or diseases. Remember the young student—who, by the way, afterwards became one of the most distinguished physicians of England—who, in visiting the wards in St. Thomas Hospital with a number of his classmates, was found to have spent all his time upon a case of simple fever, while the rest of the class were engaged in examining an infant with two heads. When reprimanded by one of his fellow students for having neglected such a rare opportunity, he replied: "While I expect in my practice to be called upon to treat a great many cases of fever, I shall probably never be required to prescribe for a two-headed monster."

THE PROPER RELATION BETWEEN MEDICINE AND SURGERY.

We have not yet reached that nice adjustment that should exist between medicine and surgery. There are to-day many operations performed that ought not to be performed. Surgeons have become too ready to solve the difficult problems of abdominal diagnosis by a simple—to the surgeon at least—incision. But this exploration is not always as simple to the patient, as the after-histories, if carefully followed up, would prove. One of the results of this, as Mr. Frederick Treves has recently pointed out in his address in surgery before the British Medical Association, is that the delicate and often wonderful skill in recognizing intra-abdominal conditions seems destined soon to become a lost art, and the power to make correct deductions from given phenomena is also likely to decrease in the same proportion, when surgeons prefer to look within the opened abdomen rather than employ the more laborious mental process of arriving at a diagnosis from physical signs and symptoms. That surgery, both general and special, is overstepping its proper and legitimate boundaries is evidenced by the serious papers upon this subject recently brought out by Sir Felix Semon of London *(British Medical Journal*, 1901, II, 1421), and Prof. Reginald Fitz of Harvard, at a recent anniversary meeting of the Academy of Medicine *(Medical News*, Dec. 28, 1901).

The results of these useless and needless operations are often not known to the surgeon who performs them. Dr. Fitz cited the case of a woman with some disorder of the stomach for which an exploratory operation was performed at a Boston hospital. An opening was made in the stomach, necessitating giving her all her nourishment through a tube. After a short time she was dismissed from the hospital and returned to her home, and as far as the hospital is concerned or the surgeon who performed the operation, she was forgotten. Her condition rendered it necessary that she should have food every two hours, and as her husband was the only one of the family able to perform this duty, he was obliged to give up his work in order to feed his wife, and after a short time he found himself in the position of having nothing to put in the tube.

I have personally observed at the Hospital for Ruptured and Crippled many women with large and uncontrollable ventral herniæ

resulting from operations that, according to the patient's story, were performed for the relief of trifling uterine or ovarian symptoms, with the result that in many cases the symptoms of the original trouble continued, and in addition the patient suffered far more from the hernia that followed the operation for their relief. I believe that the present tendency of many surgeons to operate for so-called chronic appendicitis, with insufficient evidence that such a lesion is present, is destined soon to receive a well deserved rebuke. I know of one family, consisting of a gentleman, his wife, and coachman, who were all operated upon for "chronic appendicitis" within a few weeks. Such examples force the laity to one of two conclusions—either that appendicitis is becoming contagious or rapidly increasing.

This is no tirade against justifiable surgery, and there always will be enough surgery that is proper and justifiable to command your best talent and highest endeavor, but you cannot be too deeply impressed with the importance of obtaining an accurate knowledge of the after-history of all patients on whom operations have been performed, for then only can you be in a position to judge the real value of the operation as well as the wisdom of performing it on a given patient. The table of after-results from exploratory abdominal operations cited by Dr. Fitz is well worth your study.

A good idea as to how many operations have been performed during the last decade by specialists for the relief of symptoms in different organs or regions of the body, which were supposed to be due to reflex action from some increase of the thickness of the mucous membrane of the nose or elongation of the turbinate bones, can be gotten by reading the remarkable lecture of Sir Felix Semon already referred to and published in the *British Medical Journal, loc. cit.*

If one were to attempt to give the qualifications of the ideal surgeon of to-day, he would place high up in the list: skill in diagnosis, manual dexterity, and a thorough knowledge of aseptic technique, but above all these he would place the knowledge of when not to operate.

Benjamin Rush, in his remarkable lecture on "Observations on the Duties of Physicians," delivered at the University of Pennsylvania, February 7, 1789, gives some advice that the young practitioner of to-day may well follow. He says: "In the pursuit of medical knowledge let me advise you to converse with nurses and old women. They will often suggest facts in the history and cure of disease which have escaped the most sagacious observers of nature." And he adds: "There is yet one more means of information in medicine which should not be neglected, and that is, to converse with persons who have recovered from indispositions without the aid of physicians." And yet the distinguished Dr. Rush himself does not always follow this good advice. In discussing the question of the contagion or non-contagion of pulmonary consumption he says "in some parts of Spain and Portugal its contagious nature is so generally believed in that cases have been reported to the magistrates of those countries, and the clothes of persons who died of it are burnt by their order." This lay opinion of the nurses and old women he does not accept, but states that "upon examination I find cases of supposed contagion to depend upon some one or more of the following causes," among which he mentions "malformation of the breast, any of the branches of the diseases feminine; second, upon the debility which is incurred by nursing, and the grief which follows the loss of relatives who died of it; third, upon some local cause undermining the constitutions of a whole family; fourth, upon some peculiar and unwholesome article of diet which exerts a slowly debilitating effect upon all the branches of a family." And yet the discovery of the bacillus of tuberculosis by Koch and the patient labors of modern investigators have proved that the old women's theory of contagion was right and that the distinguished Dr. Rush was wrong.

We find almost the same thing true in regard to the effect of injury or traumatism as an etiological factor in the development of malignant tumors. Nearly all writers upon cancer have explained away the frequent history of antecedent injury as a mere fiction of the imagination or a coincidence of little significance as an etiological factor. And still, a careful history of every patient with cancer of the breast will show that at least one in four, probably one in three, of all the cases will give a history of having received a blow or injury to the breast at some time prior to the discovery of the tumor. In upwards of 350 personal cases of sarcoma that I have observed the influence of trauma was most clear in a third of the cases. As William Mitchell Banks well

says: "Suppose we put one-half of these out of count as imaginary, it will leave one in eight in which there was not improbably some truth in the patient's statement." He adds: "After the way in which the vulgar but rooted belief in the infectiousness of phthisis by the Italian peasant has, in the light of modern discovery, triumphed over the contemptuous disbelief of the whole world of medicine, I am not disposed to abandon all belief in the statements of women whom we believe and admit to be anxious to find a cause for their malady. Constant repetition from different sources strengthens even a weak tale, provided the evidence be steadily in the same direction."

We are apt to think that the principles of antisepsis and asepsis have been so inculcated into the minds of the profession at large that the problems connected with sepsis and suppurative disease are no longer of interest or importance. But let me assure you this is not the case. There is much of the old preantiseptic blood still present in the profession, especially in the country districts and smaller towns, and those of you who will settle in these districts will find the need of being ever watchful and alert not only in embracing all opportunities to advance the knowledge of these principles among the older men, but in striving to keep yourselves from forgetting their importance. As an example let me cite a case that recently came within my own personal observation. A young physician trained in the best medical school in New York settled in a town less than fifty miles distant. On the occasion of a case of difficult labor he called in as a consultant the leading practitioner from a larger adjoining town, a man of large experience and about sixty-five years of age. The latter advised forceps, and without waiting even to wash his hands he smeared the forceps with some lard from the kitchen and easily and quickly delivered the child. The child lived; the mother died of sepsis the third day after, simply because the younger man with his thorough knowledge of the principles and importance of asepsis felt so bound by the feelings of etiquette and deference to an older man that the life of the patient was sacrificed. Curiously enough, I heard the history of this patient from both sides, and what a contrast! The younger physician gave me the pathetic facts I have narrated; and within a week the older physician called at my office to consult me and also told me of the case, but so far from feeling the slightest responsibility himself he attributed the death of the patient to a run of hard luck on the part of the younger physician.

Medical etiquette has its place, but it also has its limitations. Let me repeat the words of Oliver Wendell Holmes in speaking of this very subject: "Indifference will not do here . . . if there is any voluntary blindness, any interested oversight, any culpable negligence. The pestilence carrier of the lying-in chamber must look to God for pardon, for man will never forgive him."

If this arraignment was not too strong when written, half a century ago, how much more forcible should it be made to-day, when the specific causes of infection are known and simple and practical methods for preventing infection have been demonstrated.

IMMUNITY AND SERUM THERAPY.

Of all the problems that are before the physician and surgeon to-day, there are few more interesting or important than immunity and serum therapy, for the two are so closely related that they should be considered together. That an attack of scarlet or typhoid fever is capable of producing such changes in the tissues and fluids of the body as to render them immune to subsequent infection is one of the most remarkable facts in our knowledge. In addition to this individual immunity, there are well known instances of race immunity, the result of which is no more nor less than an acquired tolerance due either to inheritance or to natural selection, or to both. An immune animal or individual may be inoculated with the same germ as another susceptible or non-immune, and in the latter it multiplies and invades the tissues or the blood, and this may continue until it destroys life; while in the other it has been planted in an unfavorable soil and does not increase, but soon dies itself, instead of destroying the life of the host.

The pneumococcus or diphtheria bacillus or streptococcus are all very frequently present in the salivary secretions of healthy individuals, and yet they remain well, either because the resisting power of the individual is high, or the virulence of the germs is low. This natural immunity may be overcome by depressing agencies, such as a severe cold, or an abrasion, or by an unusual virulence of the infectious agent.

While it has long been known that in

many cases of infectious disease a single attack, however mild, proves a protection against subsequent attacks of the same disease, Pasteur was the first to show by experimental methods that animals may be rendered immune against other infectious diseases by attenuated virus. In 1880 he began his experiments in chicken cholera, and having shown that this disease was due to a specific microörganism, with attenuated cultures he succeeded in making other fowls immune to it. The enormous importance of this discovery Pasteur immediately recognized, and he concluded what was true of one infectious germ disease was very likely true of others.

I have not the time, nor is it important that I should sketch the wonderful results that have come from that first experiment of Pasteur's in 1880. You are all familiar with what has been accomplished in diphtheria. I wish merely to point out the fact that there is much work yet to be done. While we are able to save an animal from tetanus by the injection of tetanus antitoxin, our results in the human being, thus far, have been almost entirely negative, the reason being that the poison has reached the nerve centers before the characteristic symptoms have appeared. When by experiment we can show that tetanus anitoxin may be used with perfect safety, there is reason to believe that in the future the injections of this serum may be used as a routine measure in all punctured wounds in which there is a suspicion of tetanus infection, without waiting for the development of symptoms.

The danger of tetanus poisoning following vaccination or injections of the antitoxins of diphtheria has proved to be a real one, and the public have become thoroughly aroused to its importance. Whether the infection was due to impure virus or, which is more probable, to subsequent contamination through carelessness on the part of the patient, or lack of aseptic precautions on the part of the physician, further investigations will undoubtedly soon determine. If it be impossible to overcome this serious danger by practical measures, then the use of the tetanus antitoxin at the same time that the antitoxin injections are made, or vaccination is performed, is worthy of serious consideration.

Although the bacillus of tuberculosis has been discovered and enough work in the line of attempted serum therapy done to prove that our most promising means of combating this dread disease still lies in the direction of prevention, lessening or destroying the sources of contagion, we have yet to settle the very important problem recently made prominent, as to the identity of the human and bovine bacillus.

THE ETIOLOGY OF CANCER.

So great have been the discoveries in the field of the etiology of disease, that there is at present an almost universal belief that ere long we shall be able to settle whatever problems still remain. While smallpox has been relegated to such a position that the average practitioner's knowledge of the disease is gained entirely from text-books, very few seeing an actual case during the course of a long practice, and with the discovery of the cause of typhoid fever and tuberculosis more and more effective measures have been discovered to prevent if not cure them, and while diphtheria antitoxin has lowered the percentage of deaths from this cause by more than half in a few years, there is one disease more terrible than all these, the cause of which is still hidden from us, and which in spite of all the knowledge gained from a thousand years of experience, and the labors of the greatest minds in medicine to-day, is still marching on with steady progress, claiming more and more victims every year. I do not need to tell you that I refer to cancer, using the term in its broad and, as I believe, proper sense, including all malignant tumors. The great improvement in surgical technique, together with the earlier diagnosis and earlier operative treatment, have enabled us to offer permanent relief to a very much larger number of poor unfortunates afflicted with this malady than ever before; yet a calm survey of the results of modern surgery will not permit us to claim that more than 25 per cent of these sufferers are cured of the disease by operation. While this is, of course, a great triumph over the older methods, yet when we realize that the disease is steadily increasing, and to such an extent that the 75 per cent that we do not cure to-day far outnumbers the nearly 100 per cent that died fifty years ago, we see that the problem has not only not been solved, but it has grown greater with every decade, and to-day there is no problem in medicine or surgery that compares with it in importance to the world at large.

This subject is now engaging the serious attention of the leading scientific men in

medicine in every part of the world. The laity are so fully alive to its importance that all the money that we need for research work is at our command.

Let us look for a few moments at the nature of the problem, at what has been accomplished, and at what remains to be cleared up. We find surgeons and pathologists divided into two opposing groups, the one group believing that malignant tumors are due to extrinsic causes—that is, that they are due to the action of some infectious body of microbic nature. The other group, and in this group must be classed the majority of leading pathologists, believe it possible to explain the origin and development of malignant tumors purely from intrinsic causes inherent in the normal cell itself. Adami, of all recent writers on this subject, has stated* the views of both sides with the most fairness. He has shown that the "cell-rest" theory of Cohnheim no longer suffices to explain the origin of more than an insignificant number of tumors, and he holds that of the various classes of tumors we can "recognize a series with, at the one extreme, tumors originating in misplaced tissue and growing and continuing to grow without microbic irritation, and at the other extreme tumors originating in normal tissue and growing as a consequence of the low form of irritation induced by parasites, and that between these two extremes some approximate and apparently belong to the former group, others show evidence of relationship to the latter." Adami admits that "structurally tumors belonging to the two extremes may be of like nature and histological character, and a common denominator there must be, and if we can only determine it, then we can proceed to establish the true theory of tumor formation."

The problem Adami concisely states as follows: (1) Certain tumors arise from misplaced cells; (2) certain tumors arise from cells originally in normal position. What is the cause of either category of cells taking on excessive growth independent of the needs of the organism? The weakness of the "cell-rest" theory of Cohnheim, Adami does not fail to point out. "It is one thing to have 'cell rests' and fetal remains present in various parts of the body; quite another to have tumor growth originating in these. It is probable that the vast majority of 'cell rests' never take on excessive and purposeless growth," and Adami admits that we cannot attribute to these misplaced cells anything more than a predisposing cause in the formation of tumors. Personally I believe that tumors may originate in "cell rests" or embryonic tissue, precisely as they do in tissues that have suffered from trauma or irritation, because such tissue offers less resisting power to the infectious cause. The theory propounded by Adami to explain the origin of all tumors is most ingenious and worked out in great detail. In brief, this theory is that whatever the origin of the tumor proper, however it started, what makes the tumor is the assumption by the primary cells of the tumor of the "habit of growth" in place of the habit of work, and according to the extent of this replacement do we get the various grades of tumor formation, from the most benign to the most malignant. Adami believes this theory is not incompatible with the microbic origin of malignant tumors, at least of certain forms, the microbes acting in such a way as to stimulate cell proliferation, and continuing to act sufficiently long for the cells to have acquired the "habit of growth" that he has described. He does not regard it as essential that the microbic action be continuous or permanent, but thinks that the cells when once they have acquired the "habit of growth" will go on proliferating indefinitely, as in a malignant tumor. As an argument against microbes remaining in malignant tumors even if they do originate them, Adami cites the fact that after all these years of careful investigation by a host of observers there is still grave doubt whether the so-called parasites that have been described by some are really parasites or only cell degenerations. This argument is of little value, for we have not yet discovered the microbic cause of scarlet fever or of syphilis, though we know these diseases to be of germ origin.

Without attempting to enter into the unprofitable field of discussion as to whether these bodies are or are not parasites, merely calling attention, in passing, to the fact that the weight of evidence in favor of their being parasites is slowly increasing, it seems to me that Adami has made the problem unnecessarily complicated. After admitting that microbic action may and probably does furnish the exciting cause of some malignant tumors, why need we say that after

British Medical Journal, March 10, 1901.

starting the cells to proliferate it disappears, leaving us to fall back upon the theory of "habit of growth" to explain continued proliferation? The whole clinical course and life history of malignant tumors rather points to continued action of the exciting cause, and especially does the formation of metastases point to the continued life and action of this cause. The phenomenon of late recurrence to my mind furnishes additional reasons for this assumption. The most rational explanation of late recurrence and recurrence in general is that some of the infectious irritants or microbes have remained behind, and after lying dormant for longer or shorter intervals, have sprung into new action. We know that this may happen in the case of other microbic diseases, notably tuberculosis and syphilis. Some men have preferred to believe that recurrence after a certain number of years is rather a development *de novo* without reference to the original tumor, but the anatomical situation of these recurrences lends little support to such a view, but proves rather that some traces or offshoots from the original infection were left behind, or possibly the spores of some organism that may retain their vitality for a long time.

Let us look for a moment at just what evidence has been adduced in favor of the infectious nature of malignant tumors, and also not fail to note what links are missing in this chain of evidence.

First.—We will take the clinical side. It is a pretty well acknowledged fact, and one capable of reasonable proof, that cancer has increased during the past forty years to an extent difficult to explain on any other theory than that it is due to the gradual spread of some infectious microörganism.

Second.—Its relative frequency varies in such wide limits, not only in different countries but in different localities in the same country, that it points very strongly to some endemic cause, very similar to malaria.

Third.—The power of cancerous tissues or cancerous ascitic fluid to infect neighboring tissues by contact is best explained by the presence of some infectious agent. I have personally seen a very extensive infection of all the layers of the abdominal wall from an exploratory incision for intra-abdominal sarcoma with ascites, the fluid coming in contact with the raw surface. I have also had a case of carcinoma of the cæcum with an adherent loop of small intestine involved and thoroughly carcinomatous from contact. I excised both the cæcum and the diseased loop of small intestine, and microscopical examination showed very beautifully the manner of extension by contiguity. The patient died two years later from peritoneal recurrence.

Fourth.—The striking similarity between the histological formation of some forms of malignant tumors and tumors known to be of infectious origin—*i. e.*, syphilis and tuberculosis.

Fifth.—A certain number of cases in which the evidence points strongly toward a direct infection of one individual by another—*e. g.*, husband with cancer of penis from wife with cancer of uterus (cases collected by Guiltiot, *Annals of Surgery*, in 1894).

These are in brief the clinical reasons in support of the parasitic origin of cancer. Turning to the laboratory side, what do we find? During the past decade a large number of investigators in different countries have found bodies that they believe to be foreign bodies, some intracellular, others extracellular. Some have regarded these bodies as protozoa, others as blastomycetes, and the highest authorities in zoölogy have pronounced them parasites of some form and not cell degenerations.

Whether or not these bodies play any part in the causation of cancer, complete proof is still lacking.

The fact that it has been most difficult and often impossible to obtain these organisms in pure culture has made inoculation experiments for the most part of negative value. San Felice has obtained pure cultures of blastomycetes from cancer. With cultures of a similar organism from fruit he inoculated a dog and produced a typical malignant tumor, adenocarcinoma, with metastases. With a pure culture injected into the testis of a dog, he produced adenocarcinoma with metastases in both. By injecting a pure culture into the veins of a dog, he produced a connective tissue neoplasm.

This fact, if corroborated, would go to show the very close relationship between sarcoma and carcinoma. That this relationship is very close is further evidenced by the fact, seldom referred to, that in families in which the hereditary influence is striking, some individuals have carcinoma and others sarcoma.

Leopold, who has been working upon this subject for years, has still more recently

obtained microörganisms from carcinoma, and by inoculation of these organisms has produced epithelial tumors in white mice. His material was taken from the inner portions of metastatic nodules, and the utmost care was used to prevent contamination. The bodies found by Leopold were proved not to be cell elements but blastomycetes. These same organisms were found in ascitic fluid, which goes to confirm the results of Park and Gaylord, who, with ascitic fluid from a case of abdominal cancer, produced nodules of true cancer in the lungs of a guinea-pig.

The weak point in Park and Gaylord's experiments is, of course, that the inoculations were made with ascitic fluid and not with a pure culture, and the opponents of the parasitic theory at once claim that "cancer cells" quite as likely as microörganisms may have been present in the ascitic fluid and have caused the cancer nodules in the guinea-pig.

In Leopold's experiments, however, the chain of evidence is more nearly complete, and if we examine it carefully, we shall find that they come very near fulfilling the four postulates laid down by Koch for determining the etiological relationship of a given germ to a given disease, as has been recently pointed out by Dr. Samuel Bandler *(Medical Record*, June 15, 1901).

Leopold, first, found blastomycetes from a fresh case of ovarian carcinoma (under strict aseptic precautions); secondly, he isolated a pure culture from this fresh material; thirdly, this pure culture injected into the testicles of a rat produced a large number of peritoneal nodules (but not carcinoma), which, however, caused the death of the rat; fourthly, from these nodules in the rat pure cultures of blastomycetes were obtained.

Leopold concludes that "if we are successful, by inoculation of this last pure culture into rats, in producing in them again neoplasms which are of such a character that they produce the death of the animal, then the ring is complete, and no doubt can well be entertained that blastomycetes are able to produce malignant neoplasms."

It is clear that the objection can be made that the results of Leopold do not strictly fulfil the third postulate of Koch, inasmuch as the tumors produced by his culture were not histologically carcinoma. As proof that they were malignant, however, must be taken the fact that they killed the animal. This objection, furthermore, loses much of its strength if you remember the experiments of San Felice, who with the same cultures produced adenocarcinoma when injected into the testicles of a dog, and connective tissue neoplasms when the injections were made into the veins of dogs. The results of these experiments of San Felice and Leopold, together with the clinical facts that I have already referred to in connection with hereditary cancer, namely, that in families in which hereditary cancerous taint is strongly marked some members are attacked with carcinoma, while others have sarcoma, make it extremely probable that the same infectious agent may in certain individuals excite epithelial cells to abnormal proliferation, and in other individuals the same organism may excite proliferation in connective tissue cells. This abnormal proliferation of both varieties of tissue may occur synchronously, as is evidenced by the occasional occurrence of carcinoma and sarcoma in the same individual. I have personally reported a case of recurrent carcinoma of the breast, clinically and microscopically a typical carcinoma, in which, without any involvement of the supra- or infra-clavicular glands, a small round-celled sarcoma developed in the submaxillary gland, grew with great rapidity, and caused a fatal termination in a few months. This would seem to be an example in which both connective tissue and epithelial cells were susceptible to the proliferative influences of the same microörganism.

From the evidence at present at our command it is impossible to say that several or many microörganisms may not possess this power of stimulating abnormal cell proliferation. Yet I believe it would be more in accord with our present knowledge of microbic action to suppose a single parasite, be it protozoön or bacterium, the causative factor. We know that the tubercle bacillus may produce an immense variety of lesions, from a caseous mass in the lung to a solid tumor closely resembling sarcoma, and that the streptococcus pyogenes may produce in the one case a typical attack of erysipelas, while in another the same germ, or one so closely resembling it that it is impossible to differentiate it by any known means, may produce extensive suppuration or pyemia.

There is one more fact which I have not yet touched upon, and which, to my mind, more strongly than anything else from the clinical side points to the infectious origin

of malignant tumors, and that is the curative action of the streptococcus and its toxins upon the various forms of malignant tumors. The number of patients who have been either cured or benefited by the use of the living cultures or by the sterilized toxins has now become so large that this action can no longer be questioned. As I have frequently stated, I do not see how it is possible to explain this action on any other theory than that of the infectious origin of malignant tumors. The toxins destroying the parasite of the tumor by producing certain changes in the blood serum, or possibly the hyperpyrexia caused by the toxins, may alone kill the parasite or inhibit its growth.

Enough has been said, I trust, to convince you of the importance of this problem, and also, by a brief survey of what has already been accomplished, to stimulate you to do all you possibly can to hasten its final solution. Much work remains to be done, but I have a firm belief that the problem will be solved in your day, and you may do much to hasten this event.

You may think that the problems that I have sketched so briefly and imperfectly have no bearing upon your own work. You are apt to think that all discoveries, and, in fact, all progress, must come from a laboratory specialist who is devoting his entire time to the solution of these questions. Yet if you will read anew the history of medicine, and, in fact, that of science in general, you will find that many of the greatest discoveries were made by young men, and not always by those with greatest opportunities or the most favorable environment. If you have never read the early lives and struggles of Darwin and Huxley, read them now, and if you have read them, read them again. In their lives you will find the greatest inspiration in helping you solve the problems of to-day. During his famous voyage on the *Beagle,* on which he started in 1831, at the age of twenty-two, Darwin gathered the immense mass of facts that laid the foundation for the great "Origin of Species," which revolutionized the world of science.

In 1839, when only thirty years of age, he published his Journal of Researches, a book that has gone through many editions and has been translated into many languages. The one quality of mind which was of the greatest help to him in making his discoveries was that of never letting exceptions pass unnoticed. Another quality to which he owed more than perhaps anything else was his power of sticking to a subject. It is said that he used almost to apologize for his *patience,* and he often quoted the saying, "It's dogged as does it." In 1837, at the age of twenty-eight, he began his note-book. He worked without theory, but collected facts on a wholesale scale. After he had gathered an immense mass of facts and had carefully studied their relations, the central idea of the great doctrine of evolution became so clear and natural to his mind that he wondered that he had not thought of it before.

The life of Huxley is almost as inspiring. In 1846, at the age of twenty-one, he began his famous voyage on the *Rattlesnake,* and the history of that voyage is striking proof of the fact that the man makes opportunity, and not opportunity the man. Huxley went out upon this voyage as a ship surgeon, while MacGillivray, the son of a naturalist and himself a naturalist by profession, went on the same ship as the naturalist. Yet his work has been forgotten, and Huxley, "day after day, month after month, year after year, dissected and drew animal after animal as he got it from the dredge or net, or from the surface of the coral reefs," until finally he was able to forge the missing link in the chain of evidence which was to settle the great problem of uniting the living world.

To come to more recent times, we find Lister was a young man when he discovered the principles of antiseptic surgery. The history of Lister's great discovery and its tardy acceptance by many surgeons is too fresh in your minds to need more than simple reference to-night.

Edward Jenner was but a young apprentice to a country surgeon when he conceived the idea of vaccination as a method of checking smallpox.

To speak of American achievements—and they have been such that we may well be proud of them—Ephraim McDowell performed the first ovariotomy in a country town in Kentucky in December, 1809, when only thirty-eight years of age; and Marion Sims did the first successful operation for vesicovaginal fistula in 1845 at the age of thirty-two years—two operations that laid the foundation of abdominal and gynecological surgery. And again, it was but a year later, on the 16th of October, 1846, when the unknown dentist named Morton, in the amphitheater of the old Massachu-

setts General Hospital, gave the noted surgeons of Boston the world's first lesson in anesthesia, which caused the dawn of a new era in surgery.

I cannot refrain from referring to that splendid essay, perhaps the least read, but from a medical standpoint the most valuable work that ever came from the pen of Dr. Oliver Wendell Holmes, namely, the paper upon the contagiousness of puerperal fever, published in 1843, when he was only thirty-four years old. This is an example of what a young physician can do in helping to solve some of the great problems of medicine. By extensive reading and from letters from numerous practitioners he had gathered together, like Darwin, an immense mass of evidence that could not fail to convince any fair-minded person possessed of the rudiments of logic that puerperal fever was a highly infectious disease, capable of being carried from one patient to another by the physician or nurse. Those of you who will take the trouble to read this essay will find it not only a great help in your work upon the problems of to-day, but you will find it of the greatest service in making you patient while waiting for results. The work of convincing the world at large or the smaller medical world of the truth of a theory requires both time and patience. In spite of the masterly array of facts that Holmes set forth, we find that nine years later two of the most distinguished professors of obstetrics in this country, and they both happened to live in Philadelphia—Dr. Hodge and Dr. Meigs—ridiculed the theory of the infectious nature of puerperal fever, and characterized the results of Holmes's analysis of 6000 cases as the "jejune and fizzenless dreamings of sophomore writers." While one said: "The result of the whole discussion will, I trust, divest your minds of the overpowering dread that you can ever become, especially to women under the extremely interesting circumstances of gestation, the minister of evil; that you can ever convey in any possible manner so horrible virus, so destructive in its effects, and so misleading in its operations as that attributed to puerperal fever." The other said: "I prefer to attribute them to accident or Providence, of which I can form a conception, rather than to a contagion of which I cannot form any clear idea." And yet the ideas of the young man, Holmes, gradually spread through the profession, and long before the discovery of the streptococcus pyogenes the clinical recognition of puerperal fever as an infectious disease was general, and hundreds of mothers were spared an untimely death. Well does Holmes say: "When facts are numerous and unquestionable and unequivocal in their significance, theory must follow them as best it may, keeping time with their step and not going before them."

While most of you may not have the opportunity of carrying on research in the laboratories after you leave college, you will all have the chance to study diseases in the great laboratory of nature, and if you make a practice of keeping careful notes of every case and studying well all the phenomena connected with it, each one of you may be able to do something toward the solution of some of these problems I have referred to. At any rate, one result of your effort, whether successful or not, will have been to make you better men and better able to alleviate the sufferings of those who come within your reach.

In closing I can do no better than say with Huxley: "*Veritas praevalebit* some day, and if she does not prevail in your day, you will be all the better and wiser for having tried to help her, and remember that such great reward is full payment for all your labor and your pains."

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*THE SHOCK OF INTRA-ABDOMINAL OPERATIONS: ITS ETIOLOGY, PROPHYLAXIS, AND TREATMENT.**

By Lewis S. McMurtry, A.M., M.D.,
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Barring exceptional and complicated cases, the causes of death after intra-abdominal operations are three: shock, hemorrhage, and septic infection. The discovery of the relations of microörganisms to septic processes and the perfection of the modern aseptic surgical technique have practically overcome the last of these, so that in the hands of the modern abdominal surgeon it may be eliminated from the list. With the care given to hemostasis, in which the Trendelenburg position is a valuable aid, immediate and postoperative hemorrhage should be a rare cause of death. At any rate, our knowledge of its serious im-

*Read by invitation before the Philadelphia County Medical Society, Dec. 18, 1901.

port and our means for its control have reached a degree of accuracy and efficiency near to perfection. It is quite different, however, in relation to shock, which is still a potent factor of mortality, and regarding the nature, etiology, and pathology of which we know little more now than when the subject was treated by Travers and Pirogoff. Clinical observation and experimental investigation have yielded only meager results in adding to our knowledge of the nature and mechanism of traumatic shock. This is a common complication of wounds and injuries, and must remain a subject of solicitous interest to the general and special surgeon until its nature, etiology, prevention, and therapy are more clearly comprehended.

Shock is an inhibition of the vital functions, marked by vasomotor paralysis. Its manifestations are through the nervous system, and these relate especially to depressed and impaired action of the circulatory organs. It is evidently a neurosis, in which there is altered function of the nerve centers, with profound disturbance in the sympathetic nervous system. It varies in intensity from an evanescent and slight disturbance of nervous equilibrium to profound general depression and rapid dissolution. It is characterized by muscular relaxation, diminished cardiac force, lessened arterial tension, feeble respiration, arrest of glandular activity, and mental lethargy often verging into delirium. The symptoms of shock, when pronounced, present a striking clinical picture. The advent may be sudden, and the symptoms are those of most profound general depression. The pulse becomes rapid and feeble, the surface of the body is pallid and bathed in cold perspiration, the lips bloodless, the features pinched, and eyelids drooping. The respiration is feeble and irregular, and the temperature subnormal. The special senses are blunted, the mind lethargic and verging into unconsciousness. The secretory and excretory functions are in abeyance. These symptoms in the aggregate are usually of short duration. If they become more intense they speedily end in death; if the recuperative powers of the system triumph, the pulse and respiration improve, the heart acts with improved force and rhythm, the color returns to the skin, normal temperature is restored, the features regain normal appearance, and the mind resumes its sway.

In abdominal and pelvic surgery shock occurs during or immediately after operation. The terms *secondary* and *delayed* shock have tended to confusion in the study of this subject. Undoubtedly hemorrhage, acute sepsis, and fat embolism have been misinterpreted in this connection. These complications of wounds and injuries were formerly classified as delayed or secondary shock, terms most misleading. Modern surgeons no longer recognize such conditions as delayed or secondary shock.

In abdominal operations it is important to differentiate shock from chloroform asphyxia. In the latter condition the depression is sudden, with no warning symptoms; the pupils dilate; the respirations become irregular and cease; the pulse irregular, then ceases to beat at the wrist. When the anesthetic is discontinued, the patient suspended, and artificial respiration is induced, the pulse returns, and the alarming symptoms disappear. The less rapid accession of alarming symptoms and the lack of response to resuscitative treatment in shock will afford a basis of differentiation.

Sudden collapse from hemorrhage must also be differentiated from the nervous depression of shock. As a rule, the depression known as shock gradually appears during the late steps of the operation; the collapse of hemorrhage is immediate, and an expert anesthetist will readily discriminate between the two conditions. The acute anemia of concealed and persistent hemorrhage is less readily differentiated from shock than the active hemorrhage just mentioned. Immediately after operation, when the abdomen has been closed and the patient placed in bed, hemorrhage will present many symptoms in common with shock. Differentiation here is most difficult. Indeed, many deaths resulting from concealed hemorrhage are attributed to shock. The pulse of hemorrhage is characterized by increasing frequency and diminishing force and volume. The face in hemorrhage has an anxious expression, but intelligent, the respiration is quick and sighing, and there is restlessness. The most difficult cases for diagnosis are those in which shock and hemorrhage jointly produce the depression. Should the symptoms of shock recur after the patient has partially rallied the existence of hemorrhage is almost assured. Such cases are illustrations of so-called secondary shock.

Acute septic infection may be confused with shock. These cases were quite common

in abdominal surgery before the era of asepsis and during the period of imperfect asepsis. With a subnormal surface temperature the thermometer in the rectum or vagina will record a marked elevation above normal. The existence of conditions of possible sepsis will aid in the differentiation.

Emboli of various kinds may produce symptoms analogous to shock. Warren has called attention to the emboli of fat which occur in acute suppurations in fatty tissues, and which accumulate in the lungs, producing alarming symptoms and death.

The post-mortem disclosures in cases of death from shock, aside from the evidences of marked vascular disturbance, are purely negative. Shock must be regarded as a neurosis from a pathological standpoint.

In the etiology of shock individual susceptibility plays an important part. The resistance to injury in the animal creation is in proportion to the development of the nervous system. The lowest in the scale of development possesses the greatest resistance to injuries of all kinds. A highly endowed nervous organization, whether acquired or hereditary, constitutes a predisposition to shock. The health of the individual is an important factor in the etiology of shock. Debilitating diseases, insufficient and indifferent food, dissipated habits, care and mental anxiety, predispose to shock from slight injuries. In constitutions enfeebled by disease, especially when complicated by hemorrhage, operation will produce depression readily. This is especially manifest in cases of carcinoma. Repeated and long-continued hemorrhage likewise predisposes to shock, as illustrated in cases of uterine fibromata.

Dr. George W. Crile, of Cleveland, in a series of experimental investigations, has made a valuable contribution to the etiology of shock in abdominal operations.* These investigations are confirmed by practical experience. He found in a series of experiments upon dogs that shock is produced by opening the peritoneum; that simple exposure of the peritoneum to the atmosphere produced shock, the degree of shock varying inversely with the temperature of the air; the duration of operation and exposure was found to be an important factor of shock; manipulation of the peritoneum and enclosed organs induced symptoms of shock, increasing in intensity as the manipulation extended from the pelvis to the diaphragm; the same symptoms followed the disturbance of local splanchnic vasomotor areas and pressure upon the splanchnic veins, especially upon the vena cava.

These observations were made by means of the graphic method, whereby the alterations of the blood-pressure were recorded. Every experiment in the splanchnic area gave evidence that the dilatation of the vessels controlled by the splanchnic nerves was accompanied *pari passu* with the decline of pressure in the central and arterial circulatory apparatus. These nerves are vein nerves, and shock in operation on the splanchnic area is largely caused by the local disturbance of the vasomotor mechanism. The large splanchnic veins are engorged with blood in shock, and this we know is the result of impaired force of the heart's action; while the vasomotor mechanism plays an important rôle in shock, Crile's experiments show that this is not the whole cause. Clamping the thoracic aorta and splanchnic arteries did not prevent the symptoms and results of shock from injury to the intestines. It was also shown by Crile's observations that shock follows bloodless operations, thus disproving the assertion of some able clinicians that shock is but another name for hemorrhage. This important note, however, was confirmed by all experiments: "the less the insult to the tissue, the less the shock; the less the hemorrhage, the lighter the shock." The experimental investigations of Crile demonstrated throughout that *hemorrhage, rude manipulation, peritoneal exposure, prolonged anesthesia,* and *loss of body heat* are the most potent factors of shock after abdominal operations. These disclosures have long been recognized as clinical facts, and are confirmed by daily practical experience.

The prophylactic treatment of shock is most important. In all abdominal operations it should begin with the preparation of the patient for operation. While purgation, light diet, and increased elimination are essential features of preparatory treatment, such treatment should be very materially modified in the preparation of exhausted and debilitated patients as a preventive of shock. Active purgation and fasting predispose to shock. In patients exhausted by hemorrhage or debilitated by disease purgation should be omitted, and systematic feeding with bland concentrated

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liquid food up to within a few hours of the operation should be observed.

It was formerly quite the routine practice with many surgeons to administer morphine or alcohol, or both combined, preparatory to operation, in order to prevent shock. There is little either in experimental deduction or clinical experience to commend this practice. Crile found that preliminary administration of both these agents did not act favorably upon the phenomena of shock. Alcohol is still used for this purpose by some surgeons, being administered in the form of brandy or whiskey diluted with water by enema prior to operation. While increasing the heart's force and vigor for a limited time, physiological investigation has shown that this is succeeded by a period of depression which is conducive to shock. My own experience with this agent as a preventive of shock has not impressed me favorably. Opium is a depressor of vital power, and its physiological effects upon the nervous system are in the direction of promoting and increasing shock. These facts are recognized clinically by abdominal surgeons. Normal saline solution by enema preparatory to operation is an agent of positive value. By increasing the venous pressure the output of the heart is increased and the contractions are stronger.

Both clinical experience and physiological experimentation attest the value of strychnine as a cardiac and vascular tonic, and therefore it is deservedly esteemed in practice as an agent of positive value in the prevention of shock. It should be administered in doses of 1-40 grain every six or eight hours for several days prior to operation in all cases wherein shock is apprehended, and 1-30 grain should be given hypodermically immediately preceding anesthesia.

From what has already been stated as to the reduction of body temperature in the mechanism of shock, it is apparent that the temperature of the operating-room and the conserving of body heat by warm clothing should receive consideration in the prevention of shock. The temperature of the operating-room should be 80° F.; the patient should be well wrapped in blankets, and bags of hot water placed within the folds of the blankets alongside the trunk and lower extremities. Contact of the skin with glass, iron, and other conductors of heat should be avoided.

It would be difficult to exaggerate the importance of care and skill in the administration of anesthetics in relation to the prophylaxis of shock. Sulphuric ether is not so pronounced in its depressing effects upon the heart and vasomotor system as chloroform, and requires less care in its administration. Not only the amount but the method of administering anesthetics is important. The least quantity that will produce and maintain moderate surgical anesthesia, and the withdrawal of the drug at the earliest practicable moment in the final steps of the operation, are essential points to be observed. Profound or prolonged anesthesia is *per se* a potent factor of shock.

Of all the causative factors of shock no one is so pronounced and potent as hemorrhage. In patients debilitated by disease and reduced by hemorrhage, it is wonderful how slight a hemorrhage during operation will depress the patient's vitality. The effect upon the heart is immediate. It is this clinical fact which has led some able surgeons to declare that shock is but another name for hemorrhage. From the beginning to the end of the operative procedure this fact should be constantly in the operator's mind. All active bleeding, both arterial and venous, should be arrested by the application of clamp forceps. While manipulating within the abdomen and deep pelvis, mechanical interference with large venous trunks should be avoided. Oozing surfaces should be packed with gauze pads wrung out of hot water, and constant attention devoted throughout the operation to arrest bleeding.

The experiments of Crile have demonstrated that a marked degree of shock is produced simply by opening the peritoneum and exposing the surface of that membrane to the atmosphere. Hence the shortest incision compatible with easy access and manipulation should be preferred. During the progress of the operation the visceral surface of the peritoneum should be protected with hot gauze pads, which will exclude atmospheric contact, preserve body heat, and prevent surface evaporation.

The insult to the tissues, otherwise rude manipulation, is a potent and common cause of shock in abdominal operations. I know no one of the causes of shock which is so constantly disregarded as this. In no class of operations is a gentle touch more essential. Even when force must be applied, as in the separation of adhesions and enucleation of tumors, that force should be applied with due regard to the sensitive natures of

the structures involved. Rude manipulation always shocks the patient, and much handling and stretching and twisting of structures covered by peritoneum can be avoided by care and manipulative skill, a skill to be cultivated by every surgeon who does this class of operations.

The duration of an operation bears a most conspicuous causative relation to shock. Long-continued anesthesia, carefully administered, of itself will produce shock. The element of time in relation to anesthesia, to the exposed field and to manipulative irritation, is of the greatest moment in this connection. Hence the mental concentration of the operator, his command of technical detail and manipulative skill, must play an important rôle in the prevention of shock.

The symptomatic indications for treatment in shock are to facilitate the cerebral circulation by position, using the Trendelenburg position on the operating-table and elevating the foot of the bed after operation. The heart must be strengthened by strychnine administered hypodermically. Intravenous infusion of normal saline solution is indicated for reasons already given. The application of heat to the surface and the conservation of body heat in every possible way are indicated. Atropine is an agent of undoubted value in strengthening the heart. As the respiration is shallow and the blood insufficiently furnished with oxygen, artificial respiration and the administration of oxygen gas are indicated. Diffusible stimulants per enema (brandy or whiskey ℥ij, warm water ℥iv) should be administered. In the effort to meet the issues presented, there is a constant temptation to repeat medicines in large doses too frequently.

THE TREATMENT OF ITCHING.

By M. B. Hartzell, M.D.,

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The commonest, and at the same time most annoying, symptom of many diseases of the skin is itching. In most cases it is the accompaniment of some structural alteration, the result of inflammation or other pathological process; but in a considerable number it is the sole evidence of disease, the skin being to all appearances normal. It may exist in all degrees, from the slight and but little annoying irritation which disappears with gentle friction, to the furious itching which irresistibly drives the patient in frenzy to seek relief by tearing the skin with the nails until it is raw and bleeding. In its severest form it is a symptom which imperatively demands treatment, not only because it is far more intolerable than pain, but to prevent the injury to the skin which results from scratching, a factor which plays no small part in prolonging many cutaneous diseases.

Owing to the extreme frequency of its occurrence and the obstinacy with which it often resists treatment, the list of remedies proposed for its relief is a long one; and yet, notwithstanding its length, it is sometimes exhausted in vain. The selection of the remedies to be used and the methods of employing them will depend much upon whether the itching is a symptom of some local affection or constitutional disease; whether it is the accompaniment of structural alteration or the evidence of a merely functional disturbance. The local treatment which might afford complete and permanent relief in an ordinary eczema of the vulva would prove of little real use in the same disease occurring in a patient with glycosuria, without at the same time regulating the diet so as to exclude sugar-producing substances and administering such internal remedies as diminish the excretion of sugar; and the lotion or ointment which relieves the itching of a pruritus ani might be quite inadmissible in an eczema of the same region.

It goes without saying that the first step in the treatment of itching, as in the treatment of any other symptom of disease, should be the removal of the cause, when this is possible. Not infrequently this is to be found, especially in the various forms of essential pruritus, in some article of food or drink, or in some drug which the patient takes habitually. Coffee is in many cases the cause of a most annoying pruritus, usually more or less general in its distribution; tobacco in not a few instances is the offending substance; and lastly, it should not be forgotten that occasionally it is a symptom of some drug habit, more particularly of the opium habit. As illustrating this last cause, I may refer to a case of most annoying general pruritus under my observation which had lasted for fifteen years, preventing the patient from

sleeping more than an hour or two at night, which was found to be due to small quantities of opium taken for the relief of a chronic intestinal catarrh contracted during a prolonged residence in the tropics. With the withdrawal of the opium the pruritus ceased.

In a fair proportion of cases the itching is a symptom of some internal disease—*e.g.*, jaundice, obstructive or otherwise, frequently gives rise to severe pruritus; chronic nephritis is likewise accompanied in some instances by marked itching; and, as is well known, itching is a frequent symptom of diabetes mellitus, most commonly localized about the genitalia. In such cases the treatment to be effective must be primarily directed toward the cure or relief of the internal malady.

The internal remedies employed in the treatment of itching are far less numerous, and it must be said much less useful, than those used locally. They are for the most part such drugs as diminish the excitability of the sensory nerves, and are especially indicated in the cases in which the itching is more or less general, although they are also at times of use in the local forms. The bromides, particularly when there is much disturbance of the nervous system, may be of service, but they should be given in large doses. Cannabis indica, in doses of ten minims gradually increased to thirty minims of the tincture, is perhaps one of the most useful internal remedies; and tincture of gelsemium, in ten-minim doses given every half-hour until slight toxic effects are produced, is recommended by Bulkley. In certain cases fluid extract of jaborandi, in fifteen- to twenty-minim doses three times a day, proves useful, but it is difficult or impossible to give precise indications for this drug; it seems, however, to be especially serviceable when the skin is abnormally dry. Acetanilid, antipyrin, phenacetine, and salol are at times of service; but acetanilid and phenacetine have proved in my hands especially beneficial in some cases of extensive eczema and in certain forms of pruritus, in doses of six to eight grains given every four hours. Salol is indicated in those cases in which the pruritus probably arises from absorption of some abnormal decomposition product in the gastrointestinal canal. Opium and its alkaloids, notwithstanding their marked sedative effects, are directly contraindicated, owing to their well known tendency to cause itching in a large number of individuals.

But whatever internal treatment may be employed, we can rarely, if ever, dispense with local remedies; these must be our chief reliance in the great majority of cases. In mild cases inunctions with some bland fat, such as petrolatum, oil of sweet almonds, or cold cream, will often be sufficient to afford relief. Bathing the parts with water as hot as can be borne will in many instances of local pruritus prove very effective, but this is not always a suitable application in eczema owing to the unfavorable action of water upon the inflamed skin.

No local remedy is so generally useful as carbolic acid, which has been happily named by Unna "the opium of the skin." It may be used either as an ointment or a lotion, the form depending somewhat upon the extent and situation of the itching surface. The following lotion is a very cleanly and effective application in all forms of itching:

℞ Acidi carbolici, ʒss;
Glycerini, fʒij;
Aq. camphoræ. q. s. ad fʒiv.
M.

This should be mopped, not rubbed, upon the affected parts every three or four hours. If the pruritic area is small, as in pruritus of the anus, a paste such as the following will be found most effective:

℞ Acidi carbolici, gr. x vel xv;
Pulv. amyli,
Bismuthi subnit., āā ʒij;
Petrolati, ʒss.
M.

This paste will be found very useful in the itching of eczema, rarely if ever irritating; or a mixture of equal parts of carbolic acid and camphor, ten to fifteen grains of each, may sometimes with advantage replace the carbolic acid in such a paste when the inflammation is of moderate severity. Just here it may be in place to recall that toxic symptoms may follow the application of carbolic acid ointments to large areas of the skin, and that therefore it is safer to use lotions rather than ointments when it is desired to apply this drug to any considerable surface.

An alkaline oily mixture containing a considerable proportion of carbolic acid is highly recommended by Bronson as an antipruritic; the formula is as follows:

℞ Acidi carbolici,
Liq. potassæ,
Ol. lini, āā ʒss.
M.

This mixture being a strong one, it is apt to prove irritating in inflammatory conditions, but is specially indicated in the various forms of local and general pruritus.

Next to carbolic acid I would place menthol as an antipruritic. This remedy often succeeds admirably in allaying the itching of eczema, and is most useful in many cases of pruritus ani and pruritus vulvæ. As a rule it is best applied as an ointment or paste, since it is only slightly soluble in water, and alcoholic lotions are often irritating in inflammatory conditions of the skin. The following paste is an agreeable and effective application:

℞ Mentholi, gr. viij;
Pulv. amyli,
Pulv. zinci oxid., āā ʒiss;
Unguent. aq. rosæ, ʒv.
M.

The agreeable cooling sensation which follows the application of such a paste is extremely soothing in many forms of eczema, more particularly the dry and less inflammatory varieties. While its strength may be varied according to circumstances, it should rarely exceed ten grains to the ounce, since more than this is apt to produce more or less severe burning after the characteristic sensation of coolness has passed away. Menthol should not, as a rule, be applied to the face, particularly in children, because its vapors are apt to produce an unpleasant smarting of the eyes.

Resorcin, while not so generally useful in itching, yet often renders valuable service in the moist forms of eczema when applied as a lotion; ointments seem to be much less useful. The addition of a half per cent of sodium chloride seems to increase its antipruritic properties considerably; the following is a useful formula:

℞ Resorcini, ʒss vel gr. xj;
Sodii chlorid., gr. xv;
Glycerini, ʒij;
Liq. calcis, q. s. ad ʒiv.
M.

Thymol will often be found useful in certain forms of pruritus, especially in senile pruritus. It may be applied as a watery lotion, in the strength of one-half to one grain to the ounce, either alone or with a small quantity of liquor potassæ added to each ounce.

℞ Thymoli, gr. viij;
Liq. potassæ, ʒj;
Glycerini, ʒiij;
Aq., Oss.
M.

This lotion may also be used in the dry forms of eczema, but is as a rule too stimulating in the moist and acutely inflammatory varieties of this affection.

The various preparations of tar are serviceable as antipruritics, but their strong odor and the brown discoloration of the skin and clothing which they produce considerably limit their employment. The unofficial preparation known as *liquor carbonis detergens,* which is essentially an alcoholic solution of coal tar, is one of the most eligible of the tarry preparations; it may be used in a watery lotion of the strength of ten minims to a half drachm to the ounce of water. This lotion is especially useful in the itching of eczema, but is not so effective in simple pruritus. The following mixture has been found to be extremely serviceable in eczema of the anus, an affection often accompanied by intolerable itching; indeed, in some cases it has been found to be more useful than any other remedy with which the author is acquainted:

℞ Liq. carbonis detergentis, ʒij;
Borogylcerid. (25 per cent), ʒss;
Acidi carbolici, ʒss;
Aq. camphoræ, q. s. ad ʒiv.
M.

This lotion may be used with good effect in the dry and scaly eczemas of other situations, but is not well suited to the acute and markedly inflammatory forms, owing to its stimulating properties.

Bichloride of mercury is sometimes a most useful remedy in that form of pruritus which affects the scrotum and perineum; it is usually best employed as a lotion, in the strength of from one-half to one grain to the ounce of water, either alone or with the addition of five to eight grains of carbolic acid to each ounce. This makes a very cleanly and effective application in such cases. It has seemed to me that a part of its usefulness depends upon its prevention of the decomposition of the sweat and sebaceous material which are so abundantly excreted in the genital and perineal regions, since it does not seem to be nearly so useful on other parts of the skin. The strength of such a lotion should rarely exceed two grains to the ounce; otherwise a mercurial dermatitis may be produced.

Although the itching in lichen planus is usually of only moderate severity, it occasionally is so intense as to require special treatment; in such cases nothing is more useful than the ointment suggested by

Unna, which contains a considerable proportion of mercuric bichloride. The formula for this ointment is the following:

℞ Hydrarg. bichlorid., gr. ss vel v;
Acidi carbolici, gr. xx;
Ung. zinci oxid., ℥j.
M.

Not only does this act most happily in relieving the itching, but it helps to bring about the involution of the eruption.

Of all the itching diseases of the skin, pruritus ani and pruritus vulvæ are without doubt the most annoying and troublesome, the latter particularly being a most distressing and rebellious affection. In many cases the remedies usually employed with success in itching fail completely, or afford only the most transient relief. In these rebellious cases a solution of nitrate of silver, ten to sixty grains to the ounce of water, or, what is sometimes more effective, spirits of nitrous ether, painted over the parts with a camel's-hair brush every second day, will act most favorably. Crocker finds painting the vulva with compound tincture of benzoin, as recommended by Reeves, the most successful method of all those he has tried. Camphor-chloral is another remedy which may be tried with some prospect of success when the itching is unaccompanied by inflammation; it should be painted on with a brush. When the itching is confined to the mucocutaneous border of the anus a five-per-cent ointment of cocaine will produce complete temporary relief.

THE USE OF ANTIDIPHTHERITIC SERUM IN THE TREATMENT OF SEPSIS.

By D. Montgomery Paton, L.R.C.P. and S. (Edin.),
Melbourne, Victoria.

The last century saw great advances in the healing art, and while it did not quite solve all the problems of medicine, it saw the solution of some and suggested the means of solving others. Amongst the problems left for this new century were three which stand out before all the rest, viz., malignant disease, tubercle, and sepsis. To the special therapy of the latter the writer has now given three and a half years' practical work. The clue was obtained as follows: Four years ago a good deal was written about the action of diphtheria antitoxin in other diseases than diphtheria. Among the statements then made two seemed to the writer particularly important. One was that diphtheria antitoxin had been given hypodermically for sepsis and with success; the other that it had been given orally for diphtheria also with success. This led to the suggestion that given orally it might be successful in cases of sepsis. Some diphtheria antitoxin, suitable for oral exhibition, was prepared, and very soon a case appeared which gave the required test.

A man aged sixty-one had been bitten on the hand by a cat and had a superficial erysipelas which easily yielded to treatment. A week later he suffered from a most acute phlegmonous condition of hand and arm, with all the symptoms of resorption of toxins, headache, malaise, temperature over 100°, and anorexia. The first impulse was to incise the back of the hand, which was swollen immensely, tense, bright, and shining, and give him an injection of antistreptococcic serum; but recollecting the previous idea, he was given 1000 units of diphtheria antitoxin in four doses, and told to come back next day. He did so, and was found to have lost all constitutional symptoms. Temperature was 97°, head clear, and a visible improvement in the hand had occurred. He had less pain, and was able to move his fingers. After this he would not allow me to touch it, but demanded more of the same medicine; and with no other treatment except bathing it with methylated spirit he was discharged on the thirteenth day perfectly well, but with stiffened fingers from tendons being fixed in remains of inflammatory processes. He now carries an exostosis on one of his metacarpals as a memento of the occasion.

This was the first case, and from that time (March, 1898) the plan has been followed up until not less than 8,000,000 units of diphtheria antitoxin have been used, and the definite action of the serum has been so far determined as to enable me to say that its range of action is as follows:

1. A specific for the staphylococcus and streptococcus in all their varieties.

2. A specific for simple inflammation, traumatic, etc., whether we regard such inflammation as being a distinct entity or only an attenuated sepsis. Diphtheria antitoxin makes no distinction.

3. It has no parallel in medicine as an absorbent of inflammatory tissue.

4. It has considerable influence on the coagulability of the blood.

5. It has great power in some depressed nervous conditions, probably due to septic conditions acquired or to autotoxemia.

Now in the eyes of the uninitiated this is very ridiculous, and at first sight it is so. One of the first objections taken to it was that antitoxin was destroyed in the stomach, and hence was of no use given in that way. For a long time there was only the clinical evidence in my own practice which was accumulating day by day, but in course of time collateral evidence began to arrive, and shortly as possible the following are the answers to the objections as stated above:

1. Diphtheria antitoxin is much more difficult to destroy than its corresponding toxin. Heat, 60° C. (Roux and Tersin), destroys the toxin, but 70° C. does not destroy the antitoxin *(Medical Annual,* 1900, p. 55).

2. Carrier *(Ann. de l'Inst. Pasteur,* May 25, 1899, p. 435) comes to the following conclusions *in re* antitoxin—those experimented upon being tetanus and venin.

(a) Ptyalin does not modify antitoxic serum.

(b) Gastric secretion exerts little effect on the serum.

(c) Bile does not modify any of the antitoxins studied.

(d) Pancreatin modifies strongly and ultimately destroys them.

(e) Succus entericus seems capable of destroying them.

(f) Intestinal bacteria and epithelium also act destructively.

3. Parallel to antitoxin may be quoted the oral exhibition of glandular and other organic products. Thyroid and suprarenal gland are given freely with the best results, and yet there cannot be the slightest doubt that while the glandular portion is digested in the process the active principle upon which depends the characteristic therapeutic effects of the gland escapes digestion and goes on its way unaltered to do its own work in its own way.

4. The skin eruptions produced by the hypodermic use of diphtheria antitoxin have been proved to be caused by the serum and have nothing to do with the antitoxin. That even this part of the serum is absorbed in suitable cases and produces its characteristic eruption when given orally is proved by cases occurring here and there in my own practice and in that of others using antitoxin orally. And if this part of the serum be absorbed in such a form as to be capable of producing its characteristic symptom there is ten times the probability of the absorption of antitoxin in an active form.

5. Carrier finds that gastric secretion has little effect on antitoxins. With diphtheria antitoxin experience shows that the change made is as follows: Diphtheria antitoxin given *hypodermically* is a specific for the poison of Klebs-Loeffler bacillus, and weak for the septic organisms; *orally* it is specific for the staphylococcus and streptococcus, and weak for the Klebs-Loeffler bacillus. The writer has had to give it hypodermically after trying to cure diphtheria with it given orally, and is of opinion that those cases recently reported as diphtheria cured by its oral exhibition were probably largely septic and mildly diphtheritic. A colleague of my own independently of me has given it orally for septic throats for the last two years with success, but it did not occur to him that if it cured a septic throat it would cure a septic anything else. He knows better now.

6. Need one add his own experience of three and a half years' hard work, the use of 8,000,000 units of diphtheria antitoxin, the grateful thanks of patients and their united testimony, all agreeing with my own observation, to prove the worth and value of the remedy in its own peculiar sphere? In that sphere are included erysipelas, peritonitis, appendicitis, acute rheumatic polyarthritis, puerperal infection, secondary infection in phthisis, traumatisms, bronchopneumonia, abscess and suppuration, *et hoc genus omne* wherever the staphylococcus or streptococcus is to be found.

The form in which it is now being used in my own practice is to add carmine 8 grs. per oz. to the B. P. solution of tragacanth as a coloring and suspending fluid. The formula would then run:

℞ Diphtheria antitoxin, 3000 units;
Mucilag. tragacanth. carmin., q. s.;
Aquæ, q. s. ad f3ij.
M.

The dose usually given is half an ounce (750 units), and varies from night and morning to every six hours, but the latter is only used in exceptionally severe cases.

For erysipelas half an ounce every eight hours is usually effectual. For acute peritonitis or appendicitis half an ounce at once, half an ounce in two hours, half an ounce in four hours further, and then eight hours more, usually does all that is required.

Abscess is the great difficulty, and has usually to be incised as in ordinary cases,

although by the use of antitoxin many of the constitutional symptoms are abated, and if the inflammation be got in time can be readily aborted.

To use the words of a colleague on seeing a fortnight's treatment ot a septic leg on which he had worked in vain for six months: "This is good-bye to all our old teaching and training; this is a new departure." There is no secret as to the medicament, but the profession will find much to learn as to the cases suitable, the dosage to be given, and the use of other remedies. The writer freely uses any other means suggested by the nature of the case, either medicinal, hygienic, or dietetic, and they do not interfere with the action of the remedy. Should one come across a case in which the antitoxin seems to fail, then one of two things has happened, viz., either there has been a mistake in diagnosis, or one has overstepped the limits of the treatment, for it has its limits, and they are very sharply defined.

For children the full doses may be given, as the antitoxin is harmless, but usually for small children half the dose is quite effectual.

In about one per cent of the cases either a little kidney irritation or skin eruption may be seen, but it is of the most fleeting and superficial character.

The writer will be glad to answer any questions of a practical nature which may trouble any practitioner giving the antitoxin a trial in his own practice; that is, as far as his experience with the remedy will enable him to do so. The experiences of the last three and a half years with plenty of clinical illustrations are now being collected, and will be published as early as the exigencies of a busy practice will allow.

THE DRUG HABIT AND ITS CURE WITHOUT PAIN.

By M. K. Lott, M.D.,
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For the past three and a half years I have been studying this subject. During this time I have treated and cured thirty-four patients, a few of whom returned to the habit and were treated the second time, and one patient has been treated the third time.

Last May I prepared and read a paper before the Brazos Valley Medical Association on this subject which elicited the closest attention and was discussed for three hours, after having been received by a rising vote of thanks, and was ordered published in the *Texas Medical Journal*. I mention this not to gratify any vanity, for the paper possessed no literary merit, but to show the interest the association had in the subject.

Since the publication of the article I have received more than a hundred letters from members of the profession inquiring about the details of the treatment, and correspondence with some of our most learned teachers and authors indicates that the profession generally are not familiar with it. At the beginning I wish to state that I am unable to give a rational scientific reason for the effect of the remedies used, but after a careful use of the treatment in over thirty patients in a period of more than three years, I am able to stand on the empirical experience and say that the treatment properly administered will relieve any person, take him or her off of the drug used without pain and without danger, no matter how much used per day, or how long it has been used. I can take a periodical drunkard in the beginning of his spree or in the midst of it, and without pain arrest the spree in forty-eight hours and have him where he will not crave whiskey, will not want it, and will not take a drink of it, and in a few days he will be ready to enter upon his work again, not in such a case cured of drunkenness, but saved from this particular debauch. I have discharged such a one to-day, and in this paper will give the clinical notes of his case, as well as those of a morphine habitué of ten years' standing who was taking sixty grains of morphine per day *per os* in two doses.

Treatment.—After examination of the heart and kidneys and finding them in fair condition, the patient is given a bath and put to bed. It is best that the room be so arranged that it can be darkened, and in winter it should be furnished with fire, so that the patient will not be subjected to sudden changes of temperature. Of course, in summer it is needless to say that the room should be cool and well ventilated. On account of the hallucinations following the use of hyoscine, the bedclothes and the walls of the room should be as plain as possible. There must be a competent and perfectly reliable nurse, who does not leave

the patient during the first stage of the treatment.

If treating for opium or any of its preparations, there should be nothing given to cause the bowels to move, for as soon as the morphine is out of him during the second day a bilious diarrhea sets in that will worry the patient quite a good deal. The patient should have had his customary dose of opium an hour or so before beginning treatment. He will not be so much frightened, or at least uneasy, and will sleep a longer period.

I may here state that if you are treating for whiskey your procedure is different from that of opium. For whiskey I begin if possible with a purge of calomel, ten grains, and if able, commence the treatment when the patient is as free from whiskey as possible, after which the treatment is the same, with the exception that if the whiskey habitué is not at the same time using morphine he may be given a dose of that drug to quiet him at the beginning or during treatment.

The remedies used are not many and are in daily use by the profession. They are atropine, duboisine, hyoscine hydrobromate, hyoscyamine, strychnine, and pilocarpine. I prefer the hyoscine hydrobromate, as I think it the easiest controlled, and I believe in careful and competent hands it is devoid of danger.

I give the patient 1-100 grain of hyoscine hydrobromate and 1-20 grain of strychnine nitrate, and repeat with 1-200 grain hyoscine every thirty or forty-five minutes or one hour until I find the amount that will affect the patient, and when his dose is ascertained it is administered about once every hour for forty-eight hours, never leaving the patient for a minute. His pulse is carefully watched, and a dose of strychnine, digitalin, or nitroglycerin given occasionally. At the end of this period of forty-eight hours the patient is allowed to come from under the remedy, and in a few hours he will wake up and express himself as feeling well. He will generally tell you that he does not want any of his accustomed drug. Of this you wish him to be very sure, and you impress it upon him that your guide as to when he has had treatment enough is his statement. If he is sure that he does not want the drug, the first step and the great step in your task is over.

Then you begin giving doses of pilocarpine 1-8 grain, and I usually reënforce this with strychnine nitrate 1-20 grain every two to four hours, leaving out the strychnine if the pilocarpine be indicated too frequently.

The pilocarpine soon stimulates the glands. The mouth that has been so dry under the hyoscine begins to be wet and the saliva abundant; the urine, which has been scanty and high-colored, becomes abundant and clear; the perspiration tells that the skin is again active. Should you get too much action from pilocarpine a dose of atropine 1-150 grain will check it. The diarrhea that is by this time quite active and annoying I have best controlled by large doses of bismuth subgallate and fluid extract of coto bark, 30 to 40 drops, four to six times a day. The bismuth I put on the tongue and wash it down with water in which the coto bark has been dropped.

During the first part of the treatment, on account of the dry tongue and throat, it is necessary to give water frequently, and on account of the dilated pupils it is well to guard the eyes from too much light. During this period of hyoscine intoxication there should be no food given, for the reason that it would probably not be digested, and would sour and increase the diarrhea mentioned above.

After the patient has had one or more doses of hyoscine, and while he is still under the influence of his customary dose, if it were opium, he usually sleeps for a period more or less prolonged, which may be anywhere from two to twenty-four hours. This does not discontinue the hyoscine. The dose is kept up, the heart and respiration being carefully noted. After he wakes he will be more or less flighty, and may be constantly on the move for the balance of this period. Every few minutes he will attempt to get out of bed, but he is usually not hard to control, and will lie back in bed often when requested to do so, only to attempt again to get up in a few minutes. At any time should he have too much hyoscine and his delirium become boisterous, a dose of morphine one-fourth grain hypodermically will quiet him in a few minutes. Be sure to remember that hyoscine is antidoted by morphine, and *vice versa.*

During all of this treatment, the first two or three days from the beginning, there has been no conscious suffering such as is experienced by the morphine habitué if his dose is suddenly withdrawn from him, such as nausea, chills, sweats, cramps and other pain. The hyoscine absolutely prevents all

this and passes the patient through this period in comparative comfort, and enables the physician to do away with the necessity of the reduction treatment. It is this attribute of the treatment that makes it a godsend to the unfortunate victim.

Thus far all is well; the patient has been relieved from the drug. He is conscious of the fact that he does not crave his morphine the first thing in the morning. He feels perfectly free from his bondage, and is no longer a slave, chained to his horrible master. But he has not been cured; it will require a long time before his cure is complete, and often his courage and his fortitude will be taxed to the utmost. True, he has escaped from morphine without pain, but he will not be able to rebuild the shattered constitution without more or less suffering.

The functions of the body so necessary to health have been impaired; appetite, digestion, assimilation, sleep, a proper equipoise of the nervous system, are to be restored. Not only so, but for the first week, or for that matter often for the first month, there is pain in the back or the knees, the feet or the arms, sometimes quite severe. They can be relieved by electricity, by rubbing, by dry cups, etc., and the patient made fairly comfortable. Often the patient will not sleep much at first and will insist on being given something for this purpose. I seldom find it necessary to do so, persuading them that it is best to leave off all drugs and let sleep come naturally. When this course has been pursued I have found that the patients have always had sleep enough to sustain them, and the return of appetite, digestion, and assimilation was more rapid, and when sleep did come naturally it was more satisfactory. All forms of drug-taking should be discouraged if not absolutely tabooed. When pain is at any time severe it can be greatly mitigated, if not absolutely relieved, by a few doses of hyoscine hydrobromate, for while it is more hypnotic than analgesic, still if the patient goes to sleep his pain will probably leave him.

It is well to impress him with the fact that nearly if not all patent medicines recommended to relieve pain or to cure cough have some form of opium in them, and he is to shun them as he would a viper. Let him understand that there are preparations obtained from opium whose names would not in the least suggest their origin—for example, heroin, and terpine hydrate with heroin, at present so much praised as a cough medicine. Either of these and many others will surely return him to the habit if he uses them. Often the most mischievous and most dangerous compounds are sold under the most seductive names.

In order to make it clear that hyoscine can be taken in the dose of from 1-200 to 1-100 grain every hour from two to three days without danger, and to illustrate as an object-lesson its use, I herewith append the clinical notes of two cases lately treated, one for whiskey and one for morphine; in both cases the treatment was successful.

I am aware that it is generally believed this treatment cannot well be administered at a private house, but I have so often treated patients at their homes that I am sure this idea is not well founded. I do not intend to assert that there might not be danger in the administration of this treatment to patients in very bad conditions, but in the treatment of thirty-six cases extending over a period dating back to August, 1898, I have never had the slightest occasion to feel alarmed, nor even to be uneasy on account of the treatment.

The following records of two cases are appended as illustrative of the plan of treatment described:

CLINICAL NOTES OF CASE TREATED FOR MORPHINE HABIT.

Male, aged forty-eight. Daily dose, 60 grains of morphine: 30 grains at 6 A.M. and 30 grains at 5 P.M. Drug used for ten years.

Nov. 2, 1901, 10:30 A.M., gave 1-100 gr. hyoscine, 1-20 gr. strychnine nitrate.
Nov. 2, 11:15 A.M., 1-200 gr. hyoscine.
Nov. 2, 12 M., 1-200 gr. hyoscine.
Nov. 2, 12:45 P.M., 1-200 gr. hyoscine.
Nov. 2, 1:30 P.M., 1-200 gr. hyoscine.
Nov. 2, 2:15 P.M., 1-200 gr. hyoscine.
Nov. 2, 3:00 P.M., 1-200 gr. hyoscine.
Nov. 2, 3:40 P.M., 1-200 gr. hyoscine.
Nov. 2, 4:30 P.M., 1-200 gr. hyoscine.
Nov. 2, 5:30 P.M., 1-200 gr. hyoscine, 1-20 gr. strychnine nitrate.
Nov. 2, 6:30 P.M., 1-200 gr. hyoscine.
Nov. 2, 7:10 P.M., 1-200 gr. hyoscine.
Nov. 2, 8:15 P.M., 1-200 gr. hyoscine.
Nov. 2, 9:00 P.M., 1-200 gr. hyoscine.
Nov. 2, 9:45 P.M., 1-100 gr. hyoscine. Restless.
Nov. 2, 11:25 P.M., 1-100 gr. hyoscine.
Nov. 3, 12:30 A.M., 1-100 gr. hyoscine. Sleeping soundly.
Nov. 3, 1:40 A.M., 1-100 gr. hyoscine. Sleeping.
Nov. 3, 3:00 A.M., 1-100 gr. hyoscine.
Nov. 3, 5:10 A.M., 1-100 gr. hyoscine.
Nov. 3, 6:20 A.M., 1:100 gr. hyoscine; strychnine nitrate 1-20 gr., and digitalin 1-60. Pulse weak.
Nov. 3, 7:15 A.M., 1-100 gr. hyoscine.

Nov. 3, 7:30 A.M., 1-100 gr. hyoscine. Pulse good and strong.
Nov. 3, 8:30 A.M., 1-100 gr. hyoscine.
Nov. 3, 9:10 A.M., 1-100 gr. hyoscine. Voided urine.
Nov. 3, 9:40 A.M., 1-100 gr. hyoscine.
Nov. 3, 10:10 A.M., 1-100 gr. hyoscine.
Nov. 3, 11:10 A.M., 1-100 gr. hyoscine. Restless.
Nov. 3, 11:30 A.M., pilocarpine 1-8 gr., and strychnine 1-20 gr.
Nov. 3, 12:00 M., 1-100 gr. hyoscine. Restless.
Nov. 3, 1:15 P.M., 1-100 gr. hyoscine.
Nov. 3, 2:15 P.M., 1-100 gr. hyoscine.
Nov. 3, 3:15 P.M., 1-100 gr. hyoscine.
Nov. 3, 3:45 P.M., morphine 1-8 gr., strychnine 1-20 gr.
Nov. 3, 5:00 P.M., 1-100 gr. hyoscine.
Nov. 3, 6:00 P.M., 1-100 gr. hyoscine.
Nov. 3, 6:30 P.M., strychnine nitrate 1-20 gr., digitalin 1-60 gr.
Nov. 3, 7:00 P.M., 1-100 gr. hyoscine, morphine 1-8 gr.
Nov. 3, 8:15 P.M., 1-100 gr. hyoscine. Restless.
Nov. 3, 9:45 P.M., 1-100 gr. hyoscine.
Nov. 3, 11:00 P.M., 1-100 gr. hyoscine. Resting easily.
Nov. 3, 11:40 P.M., digitalin 1-60 gr., nitroglycerin 1-100 gr.
Nov. 4, 1:20 A.M., pilocarpine 1-8 gr., nitroglycerin 1-100 gr.
Nov. 4, 3:00 A.M., pilocarpine 1-8 gr.
Nov. 4, 5:25 A.M., 1-100 gr. hyoscine. Restless; pain.
Nov. 4, 6:45 A.M., 1-100 gr. hyoscine.
Nov. 4, 7:30 A.M., 1-100 gr. hyoscine.
Nov. 4, 8:00 A.M., 1-100 gr. hyoscine.
Nov. 4, 8:40 A.M., 1-100 gr. hyoscine.
Nov. 4, 9:00 A.M., digitalin 1-60 gr., pilocarpine 1-8 gr., nitroglycerin 1-100 gr.
Nov. 4, 9:20 A.M., 1-100 gr. hyoscine.
Nov. 4, 11:30 A.M., 1-100 gr. hyoscine.
Nov. 4, 11:45 A.M., pilocarpine 1-8 gr.
Nov. 4, 12:40 P.M. Second stage of treatment commenced.
Nov. 4, 1:30 P.M., 1-8 gr. pilocarpine.
Nov. 4, 2:30 P.M., 1-8 gr. pilocarpine.
Nov. 4, 3:00 P.M., 1-8 gr. pilocarpine.
Nov. 4, 4:30 P.M., 1-8 gr. pilocarpine.
Nov. 4, 6:40 P.M., 1-8 gr. pilocarpine. Glass of milk.
Nov. 5, 5:00 A.M. Began to suffer pain in chest and bowels and continued until 9 A.M., when he said he would take morphine if he had it to relieve pain.
Nov. 5, 9:00 A.M., 1-100 gr. hyoscine, 1-20 gr. strychnine nitrate, 1-60 gr. digitalin.
Nov. 5, 10:00 A.M., 1-100 gr. hyoscine.
Nov. 5, 11:00 A.M., 1-100 gr. hyoscine.
Nov. 5, 12:00 M., 1-100 gr. hyoscine.
Nov. 5, 1:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 2:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 3:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 4:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 5:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 6:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 7:00 P.M., 1-100 gr. hyoscine.
Nov. 5, 8:00 P.M. Stopped hyoscine.
Nov. 6, 12:10 A.M., pilocarpine 1-8 gr., strychnine nitrate 1-20 gr.
Nov. 6, 3:00 A.M., pilocarpine 1-8 gr.
Nov. 6, 6:00 A.M., pilocarpine 1-8 gr.
Nov. 6, 7:30 A.M., pilcocarpine 1-8 gr., strychnine nitrate 1-20 gr.
Nov. 6, 8:30 A.M., pilocarpine 1-8 gr.
Nov. 6, 8:40 A.M., glass of milk.
Nov. 6, 9:30 A.M., pilocarpine 1-8 gr.
Nov. 6, 10:40 A.M., pilocarpine 1-8 gr.
Nov. 6, 11:40 A.M., pilocarpine 1-8 gr.
Nov. 6, 1:05 P.M., pilocarpine 1-8 gr.
Nov. 6, 2:15 P.M., 1-100 gr. hyoscine.
Nov. 6, 3:30 P.M., 1-8 gr. pilocarpine, strychnine 1-20 gr.
Nov. 6, 3:40 P.M., 1-8 gr. pilocarpine.
Nov. 6, 5:00 P.M., hyoscine 1-100 gr., strychnine 1-20 gr.
Nov. 6, 8:20 P.M., pilocarpine 1-8 gr., strychnine 1-20 gr., digitalin 1-60 gr.
Nov. 7, 8:00 A.M., 1-100 gr. hyoscine, strychnine 1-20 gr., digitalin 1-60 gr.
Nov. 7, 9:30 A.M., nitroglycerin.
Nov. 7, 10:00 A.M., 1-100 gr. hyoscine, for pain.
Nov. 7, 11:00 A.M., pilocarpine 1-8 gr.
Nov. 7, 1:00 P.M., 1-100 gr. hyoscine, 1-20 gr. strychnine, 1-60 gr. digitalin.
Nov. 7, 4:00 P.M., 1-20 gr. strychnine, 1-60 gr. digitalin, pilocarpine 1-8 gr.
Nov. 7, 6:00 P.M., 1-100 gr. nitroglycerin, 1-60 gr. digitalin, pilocarpine 1-8 gr.
Nov. 7, 10:30 P.M., hyoscine for sleep, pilocarpine 1-8 gr.
Nov. 8, 7:00 A.M., strychnine 1-20 gr., digitalin 1-60 gr., pilocarpine 1-8 gr.
Nov. 8, 9:30 A.M., strychnine 1-20 gr., digitalin 1-60 gr., pilocarpine 1-8 gr.
Nov. 8, 12:00 M., strychnine 1-20 gr.
Nov. 8, 4:00 P.M., 1-8 gr. pilocarpine, strychnine nitrate 1-20 gr.
Nov. 8, 6:00 P.M., 1-100 gr. hyoscine, 1-20 gr. strychnine, 1-60 gr. digitalin.
Nov. 9, 9:30 A.M., 1-100 gr. hyoscine for sleep, 1-20 gr. strychnine, 1-60 gr. digitalin.
Nov. 9, 12:00 M., pilocarpine 1-8 gr., 1-20 gr. strychnine.
Nov. 10, 10:00 A.M., pilocarpine 1-8 gr., 1-20 gr. strychnine. Clear of all bad symptoms and pains and free from morphine.
Dec. 17. This man has gained 26 pounds; perfectly well, eats and sleeps well, and is happy.

Wm. T., aged forty-two. Whiskey habit. Periodical drinker for fifteen years. This man went on continuous sprees for from three weeks to two months, and was often put in jail and kept there. He was violent, and his family had to leave home.

Nov. 30, 1901, 12:20 P.M., gave hyoscine 1-100 gr.
Nov. 30, 1:00 P.M., hyoscine 1-200 gr. Sleeping.
Nov. 30, 2:00 P.M., hyoscine 1-200 gr.
Nov. 30, 3:00 P.M., hyoscine 1-200 gr.
Nov. 30, 4:00 P.M., hyoscine 1-200 gr.
Nov. 30, 5:00 P.M., hyoscine 1-200 gr.
Nov. 30, 6:00 P.M., hyoscine 1-200 gr.
Nov. 30, 7:00 P.M., hyoscine 1-200 gr. Restless.
Nov. 30, 8:00 P.M., hyoscine 1-200 gr.
Nov. 30, 9:00 P.M., hyoscine 1-200 gr.
Nov. 30, 10:00 P.M., hyoscine 1-100 gr.
Nov. 30, 11:40 P.M., hyoscine 1-100 gr.
Dec. 1, 1:00 A.M., hyoscine 1-100 gr., morphine 1-4 gr.
Dec. 1, 2:15 A.M., hyoscine 1-100 gr.
Dec. 1, 3:15 A.M., hyoscine 1-100 gr.
Dec. 1, 4:15 A.M., hyoscine 1-100 gr.
Dec. 1, 5:30 A.M., hyoscine 1-100 gr.
Dec. 1, 6:45 A.M., hyoscine 1-100 gr.
Dec. 1, 7:50 A.M., hyoscine 1-100 gr.
Dec. 1, 9:00 A.M., hyoscine 1-100 gr.
Dec. 1, 10:00 A.M., hyoscine 1-100 gr.
Dec. 1, 11:00 A.M., hyoscine 1-100 gr.
Dec. 1, 12:00 M., hyoscine 1-100 gr.
Dec. 1, 1:00 P.M., hyoscine 1-100 gr.
Dec. 1, 2:00 P.M., hyoscine 1-100 gr.

Dec. 1, 3:30 P.M., hyoscine 1-100 gr., morphine 1-4 gr.
Dec. 1, 5:15 P.M., hyoscine 1-100 gr.
Dec. 1, 6:30 P.M., hyoscine 1-100 gr. Quiet.
Dec. 1, 7:45 P.M., hyoscine 1-100 gr.
Dec. 1, 8:45 P.M., hyoscine 1-100 gr.
Dec. 1, 10:00 P.M., hyoscine 1-100 gr.
Dec. 1, 11:00 P.M., hyoscine 1-100 gr.
Dec. 1, 12:00 P.M., hyoscine 1-100 gr.
Dec. 2, 1:00 A.M., hyoscine 1-100 gr.
Dec. 2, 2:15 A.M., hyoscine 1-100 gr.
Dec. 2, 4:00 A.M., hyoscine 1-100 gr.
Dec. 2, 5:30 A.M., hyoscine 1-100 gr.
Dec. 2, 6:30 A.M., hyoscine 1-100 gr.
Dec. 2, 7:30 A.M., hyoscine 1-100 gr., morphine 1-4 gr.
Dec. 2, 8:30 A.M., hyoscine 1-100 gr.
Dec. 2, 9:30 A.M., hyoscine 1-100 gr.
Dec. 2, 11:00 A.M., hyoscine 1-100 gr.
Dec. 2, 12:00 M., hyoscine 1-100 gr.
Dec. 2, 1:30 P.M., pilocarpine 1-8 gr.
Dec. 2, 3:30 P.M., pilocarpine 1-8 gr.
Dec. 2, 6:30 P.M., pilocarpine 1-8 gr.
Dec. 2, 10:00 P.M., pilocarpine 1-8 gr.
Dec. 3, 6:00 A.M., pilocarpine 1-8 gr.
Dec. 3, 11:00 A.M., pilocarpine 1-8 gr.

Said he had no desire for whiskey. The treatment was discontinued, and tonics such as iron, quinine, and strychnine were given. He remained at home four days. Since then he has been pursuing his business, and to-day (Dec. 17) is perfectly himself, and says he has no desire for drink.

AN UNUSUAL CASE OF RETENTION OF URINE.

By Charles Edward Ziegler, M.D.,
Allegheny, Pennsylvania.

The following case which was treated in my service at the Allegheny General Hospital presents certain unusual features which seem to entitle it to publicity:

T. B., white, American, forty-seven years old, single, and a laborer.

Family history: Father died at eighty of old age, mother at forty from "a bad cold." Two brothers alive and well; one sister died in infancy.

Previous history: Measles at five, "quinsy" at forty-two; otherwise has always been in excellent health. Denies any venereal history. Never used any intoxicating liquors until forty years old. Since then has drunk a great deal of beer, taking at times as much as two gallons a day. Has never been married, but has indulged excessively in sexual intercourse.

History of present condition: On March 27 was suffering from a "diarrhea." For this condition he says he drank a quart of "blackberry brandy" a day for three days. He "grew tired" of this, and then took a quart of gin a day for three days. Then he substituted a quart of "old blackberry brandy" a day for several days. During all this time he was drinking in addition about a gallon of beer a day. The diarrhea continued. He then consulted a physician, who prescribed for him and advised him to go to a hospital, not so much for the diarrhea, which was soon controlled, but for an enormously distended abdomen and edema of the lower extremities. The physician evidently mistook the abdominal condition for ascites.

Examination: Patient has light complexion, is of medium height, spare build, and has the appearance of much dissipation. Heart, lungs, and liver seem to be normal. Abdomen is enormously distended from a few inches above the umbilicus to the symphysis, having a pendulous, tumor-like appearance which is dull all over. Complains of very little abdominal pain. There is marked edema of lower extremities from hips to toes.

There is no evidence of retention of urine, and no apparent abnormality in micturition. Every three or four hours the patient passes six to eight ounces of urine voluntarily. There is, however, great difficulty in starting the stream; there is no force to the flow, and dribbling is marked at the close of micturition. Examination per rectum reveals a very large prostate which is very sensitive.

Catheterization: Was unable to pass a soft catheter at all, but with difficulty succeeded in passing a steel catheter. Drew off by measure exactly 112 ounces of urine before removing the catheter. In addition, fully three ounces was lost in the bed. It was perhaps a hazardous thing to draw it all at once, but no bad results followed. The patient was kept very quiet for eight hours in the recumbent position.

The abdominal distention promptly disappeared, and within twelve hours the edema of the lower extremities was entirely gone.

Urinalysis: Urine was amber-colored, clear, highly acid; specific gravity 1010; no albumin; no casts, and no pus; no crystals; a few red blood cells.

Patient refused further catheterization, although the bladder was filling again, and refused to remain longer in the hospital, leaving on the second day after admission —April 11. The prostate at this time was smaller, much softer, and less tender.

This case presents several interesting

and unusual features. Retention of urine in a man as young as this unattended by pain and the symptoms of retention is extremely rare. Enlargement of the prostate is common enough in the late forties, and rectal examination seemed to show that this had caused a gradual dilatation till the overstretched bladder accommodated without discomfort seven pints of fluid. The complete withdrawal of this fluid, which showed no evidences of vesical inflammation, was not followed by bleeding, but caused the rapid disappearance of the edema of the lower extremities, which was doubtless due to the pressure of the overfull bladder on the blood-vessels. It is probable that had this case remained under observation, intermittent catheterization and the use of prostatic dilatation might have enabled him to keep his bladder empty. Without such treatment, retention and infection with the sequelæ are fairly sure to follow.

TREATMENT OF FRACTURE OF THE SPINE UNCOMPLICATED WITH A CORD LESION.

In cases of fracture of the spine uncomplicated with cord lesion, no attempt should be made, says MORTON *(Practitioner,* September, 1901), to manipulate the vertebræ into better position, either with or without extension of the spine. Such manipulation may possibly damage the cord. The best treatment would seem to be the early application of a plaster jacket to fix the spine. As it would certainly involve some risk of causing further displacement, and possibly damage the cord, to suspend the patient or even to allow him to sit up, it may be best to apply the jacket while the patient is in the recumbent position. If there are no symptoms of injury to the cord, and the spine is fixed in this way for several weeks, the patient will almost certainly recover. It is well, however, to remember that the signs of hemorrhage into the spinal canal may come on slowly after a fracture of the spine. For this reason the surgeon should be guarded in giving a good prognosis within an hour or two after the accident. This precaution should be taken even if the signs of damage to the cord are very slight or even absent at first.

ETHER VS. CHLOROFORM.

We are so accustomed to the idea that in America, the birthplace of ether anesthesia, the drug is almost exclusively used as a general anesthetic, it is with no little surprise that we learn from a recent paper by Dr. Frazier that he and many of his colleagues in Louisville are ardent advocates of chloroform. The reasons which he advances for this preference are, however, with one exception, not very convincing. If the anesthetist understands the methods of administering the one drug and not the other, undoubtedly it will be safer for the patient that he administer that drug with whose action and usage he is familiar. Such considerations can have no weight in deciding the general question as to which is the more dangerous drug for general use. The one point of cardinal importance which must always be kept in mind is that chloroform is at least seven times a more powerful nerve poison than ether, and consequently the margin of safety under it is correspondingly reduced. It is a striking fact how other figures in relation to the two drugs bear out this proportion. Thus, speaking roughly, we find that we use as many ounces of ether for a given length of anesthesia as we do drachms of chloroform. The percentage mortality of the two drugs is also very instructive. If we combine the statistics collected by Drs. Julliard and Ormsby, we find that ether is roughly five times as safe as chloroform.

Anesthesia.	Total number of Administrations.	Total number of deaths.	Death-rate.
Chloroform	676,767	214	1 in 3,162
Ether	407,553	25	1 in 16,302

In the face of these figures there can be but one conclusion, that the routine anesthetic for general surgical purposes should be ether. While as a general working principle this position is unassailable, it should not for a moment be allowed to interfere with the specialist or limit his privilege to select that drug which under the circumstances he considers most suitable in a given case. As, however, we are apparently far from that time when the administration of anesthetics will be considered of sufficient importance to demand proper instruction and efficient knowledge, and as such papers as Dr. Frazier's are addressed to general medical practitioners rather than to specialists, we feel it a duty to enter a strong protest against the conclusions which he arrives at. —*Medical Press,* Sept. 18, 1901.

The Therapeutic Gazette

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Leading Articles.

THE EMPLOYMENT OF COLD IN THE TREATMENT OF TYPHOID FEVER.

Constant readers of the THERAPEUTIC GAZETTE have not forgotten the instructive and valuable paper contributed to its pages some months ago by Dr. Simon Baruch, who can be truly called the "American apostle of hydrotherapy." It will be remembered that in that paper he gave the following correct and emphatic advice: do not use cold in typhoid fever for the purpose of reducing the temperature, but with the object of causing reaction and producing a normal equilibrium in the circulation. It is unfortunate that this succinct way of expressing the matter was not brought before the profession years ago, for at the present time a large number of physicians either do not employ cold at all in the treatment of this disease, or if they do, use it as an antipyretic rather than as a remedy designed to aid in the elimination of poisons, and to refresh the patient. It is true that we are in the habit of keeping a careful record of the temperature during the administration of the bath, but this is done not so much with the object of determining the advantage to the patient by the reduction of his fever as it is with the purpose of affording us a gauge as to the general influence of the hydrotherapeutic measure.

There can be no doubt that two radical objections to the employment of the so-called Brand, or tub, method in typhoid fever exist. The first of these is that the friends of the patient and the patient himself frequently are strongly opposed to this process; and secondly, it is almost impossible to carry it out in private practice because of the lack of a suitable tub near the patient, and because of the impossibility of having a sufficient number of attendants to lift the patient from the bed to the tub.

For a number of years we have endeavored to impress upon our readers, and upon the students whom we have taught, that the actual immersion of a patient in a tub of water is not necessary for the production of the valuable results which accrue from the use of cold or hydrotherapy in the treatment of this disease. Certainly, no one who thinks deeply on the matter can believe that it is the tub itself which produces any advantage. It is, on the other hand, the application of the cold, the stimulation of the nervous system, the elimination of poisons, the cleansing of the skin, the equalization of the circulation, which we are seeking; and therefore it may be remembered that we have advocated on a number of occasions the modified bath, by which the patient is cooled and refreshed and stimulated without removal from his bed. The bed is to be covered with a rubber sheet, the patient stripped, and then sponged with water at various temperatures, according to his needs, or even rubbed off with a piece of ice, it being the experience of the writer that patients very frequently prefer the ice rub with friction to the employment of water, which, of course, is not so cold, but which trickles over portions of the body to which friction is not being applied, and therefore produces sensations which are disagreeable. This method, too, permits us to use temperatures in contact with the skin which vary with the needs of the patient from day to day, and, more important, enable the attendant to improve the circulation and abstract heat from the great muscles

of the back in which stasis is most apt to occur as the result of the dorsal decubitus. This rubbing of the back is impossible when the patient is in a tub.

In the Progress columns of this issue of the GAZETTE we publish an abstract of some remarks made by Dr. A. A. Smith, of New York, in a recent discussion of the treatment of typhoid fever, and in this abstract it will be seen that Dr. Smith has found these various substitutes for the immersion bath entirely satisfactory. The same issue of the *Medical Record*, that of December 7, also contains a description of a frame for the typhoid "slush bath" by Dr. U. F. Martin, of New York. We think that this term "slush bath" is an unfortunate one, but the method itself seems to us advantageous in that it obviates the necessity of moving the patient from a bed to a neighboring tub; and it is stated that it has been employed in the medical wards of St. Luke's Hospital, New York, for some time with satisfaction. This bath consists in four pieces of light wood, two of which are end-pieces, and two side-bars. For the ordinary hospital bed the end-pieces measure across 27 inches above, and 37 inches below. In height they measure 16¼ inches, and in these pieces are holes for the side-bars to fit at different levels, thereby enabling the attendant to change the depth of the trough according to his wish. The side-bars are 6 feet 7 inches in length, and in their ends are small holes through which wooden plugs can be put, if the side-bars have been fitted in the end-bars. Along the upper part of the side- and end-bars are placed small brass hooks in which to slip the loops of pieces of tape which are sewed on to the rubber sheet. When the bath is given, the ordinary bedclothing is pulled away from the bed, and the rubber sheet slipped under the patient. The frame is then put in place; the sides and ends of the rubber sheet are attached to the brass hooks that we have named, with the result that the central portion of the sheet sags down by its own weight, and still more so when the patient rests in it. Water at the proper temperature is now poured over the patient who lies in this artificial bath-tub, and active friction is employed. When it is desired to drain off the water, the sheet at the foot is unhooked, and the water is allowed to flow into a bucket. It seems to us that this form of bath might be used in almost any case of typhoid fever where the attendant possesses ordinary intelligence, care being taken that the exposure to cold is not too prolonged, and that the attendant is thoroughly instructed in the necessity of using active friction with the hands while the patient has the cold water in contact with his body.

But the uses of hydrotherapy do not stop here. There are a number of other purposes for which it may be employed with great advantage, and in New York in the Hydriatric Department of the Riverside Association a large number of invalids are treated by various hydrotherapeutic measures even when they are not febrile. It is interesting to note that in six years the number of patients treated by methods of hydrotherapy in this institution has increased sixfold, and these measures are employed for the following purposes: As a tonic to improve nutrition, and in neurasthenia, dyspepsia, phthisis, bronchitis, asthma, intestinal indigestion, and anemia; as alteratives in diseases due to faulty tissue changes, as rheumatism, gout, diabetes, syphilis; for the reduction of obesity; and last, but not least, for cleansing purposes to improve the hygienic conditions and personal habits of the poor. Surely this organization, which is a charitable institution, is to be regarded with interest by the medical profession, not only because it is charitable in its object, but also because it is a great clinical school for the dissemination of hydrotherapeutic learning in America.

THE VACCINATION QUESTION AND THE PURITY OF VACCINE.

It is useless in this year of grace to present any statistics which support the view now universally believed that vaccination has the power of preventing smallpox. Every physician has upon his shelves books which contain articles presenting convincing evidence of this nature. The only facts for the physician of the present day to consider are those which deal with the various varieties in which vaccine is supplied, and with the methods employed in the propagation of the vaccine virus. While this is a subject which is of great interest at all times, it possesses peculiar importance at present, because smallpox seems to be widely diffused over a large part of the United States, and a greater number of people

seem to be infected by it than has been the case for a number of years. And, again, it is of peculiar interest at this time because at various points, somewhat widely separated, cases have been reported which have suffered from tetanus after vaccination. We have delayed expressing an editorial opinion in regard to these cases until by considerable personal investigation we have become convinced that vaccination itself can in no way be accused of being responsible for this most unfortunate complication. It may be possible that in some instances individual samples of vaccine lymph have been contaminated by the tetanus bacillus, and it is rather interesting in this connection to note that so far every case of tetanus reported has followed vaccination by the product of one particular manufacturer, which would seem to indicate that in some unfortunate manner at least some samples of this lymph had become contaminated. On the other hand, it is only fair to state that in nearly every instance where tetanus has occurred there has been sufficient exposure to possible infection by the tetanus bacillus to make it impossible for us to assert that the vaccine lymph itself was actually contaminated.

It has been proposed by some that a national medical body such as the American Medical Association shall appoint a committee which shall be empowered to investigate the various methods of preparing vaccine, and make such criticisms and recommendations as it sees fit. We believe that the appointment of such a committee would be excellent in theory, although we are not certain that its practical utility would be very great. Certain it is that those manufacturers whose methods are beyond criticism would hail a visit, on the part of such a committee, with delight; while those whose methods are not all that they should be would be forced to improve them. It seems to us that this committee might also undertake a collective investigation, which would be of very great value in determining the relative values of different forms of vaccination material, and of also discovering what conditions really represent a good "take" in persons who have been vaccinated in early life and who are subjects of revaccination. Certainly at the present time much divergence of opinion exists in regard to the influence of vaccination upon persons who have already been successfully vaccinated in previous years. We publish in the Progress columns of this issue some conclusions arrived at by Dr. George Dock in regard to this important point.

It is to be remembered that in these days a very sore arm is no criterion of a good "take," yet physicians and patients in general do not seem to think that they are adequately protected unless they have a suppurating sore with more or less local discomfort. Whenever this occurs in a person who has already been successfully vaccinated at a previous time, we believe that either the vaccine itself is impure and contains pus organisms, or the scarified spot has become infected through the inadvertence of the patient. It is also to be remembered that in some previously vaccinated individuals vaccination with the modern glycerinized lymph produces only a small raspberry-like mass which is to be regarded as a fictitious "take," and that it is only when one or more small pocks or pustules develop, which later become somewhat umbilicated, that the physician has a right to consider that his patient is protected by the more recent vaccination from true smallpox infection.

THE SURGEON'S RESPONSIBILITY FOR POSTOPERATIVE CONDITIONS.

It is difficult for a physician to clearly express the views which follow without seeming to reflect upon the skill, courage, and training of the surgeon. Such is not the intention of the present article, but it is written because we believe that statistics in regard to operative recoveries produce erroneous conclusions as to the value of the operation itself in many instances. We are, of course, aware of the fact that under certain circumstances an operation is imperatively needed, and must be performed, be the result what it may, in an effort to save life; and no one can be beyond the writer in his admiration of the skill and bravery with which surgeons operate at such times. There are, however, a certain number of cases in which operations are performed for the relief of conditions which are not sufficiently pressing to endanger life, but which may be productive of very considerable annoyance, discomfort, and pain. Not infrequently the condition is one which renders the patient willing to submit to an operation, and she relies upon the superior

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judgment of her physician to determine the degree of relief which she will obtain as a result of the operative ordeal. In some instances much relief follows. But it has been our experience that in a certain number of cases what might be called "substitution symptoms" are developed, so that the patient's condition, while relieved in one direction, is made worse in another, and therefore the operation is of no material benefit to her. Probably most physicians of experience will agree with the writer in the statement that a very large number of women who have been subjected to abdominal section for various causes are more or less invalids for the rest of their days, and regard the operation as having been a failure, not because the particular trouble for which the operation was performed has not been relieved, but by reason of the development of associated symptoms which made their lives as unbearable as before. Thus, we have in mind at the present time the case of a woman from another city, who was operated upon because she had a chronic inflammation of her Fallopian tubes which gave her much discomfort and pain, but was not severe enough in any way to jeopardize her life. So far as the operation was concerned, recovery was rapid and complete. But so far as her general condition is concerned, she is now worse than before. The pelvic pain after the operation was worse than before it was performed, and finally became so severe that a second abdominal section was carried out, with the result that the surgeon told her that he had "found and removed a buried unabsorbed ligature," but although she passed through this second operation successfully, she is still suffering as much pain and discomfort as at any time in her life. The thing that she was seeking was good health, and the fact that the original cause of her ill health has been removed and a new cause substituted in no way increases her comfort of mind.

Then, again, it is not to be forgotten that the nervous shock and the administration of the anesthetic produce effects which last very much longer than those which are manifest to the eyes of the surgeon for a few hours or days after the operation has been performed. Various neurotic, anemic, digestive, circulatory, and other manifestations are developed which require the greatest skill on the part of the physician after the patient has returned from the scene of her operative recovery.

In other words, when advising as to the performance of an operation, it seems to us that the physician and surgeon should not only discuss the probabilities of the patient passing safely through the operative ordeal, but also the question as to whether in the event of her surviving the ordeal, the last stage of that woman will not be worse than the first.

In more than one instance of chronic relapsing appendicitis we have seen operative procedures resorted to with the result that the patient's life has been evidently shortened, in that he or she died a few days later from postoperative complications, when a number of weeks or months of life might have been passed before another attack of the local trouble asserted itself.

The discovery of anesthetics is in one sense not an unmixed blessing, since it has made, with the practice of antiseptic surgery, certain operative procedures almost too easy of performance. After all, the patients in their dread of the knife have, in their ignorance, a certain amount of justification, and illustrate the old adage that the children of this world are wiser than the children of light, for, ignorant though they be, their fear of sequelæ is sometimes greater than that of their advisers.

MODERN METHODS OF EXCLUDING PLAGUE.

If therapeutics does not deal with the treatment of the healthy and bring them protection from disease, nevertheless those who are most interested in therapeutic measures are also interested in those which have been found to be efficacious in preserving health. It will be remembered that the mircoörganism of bubonic plague is one which has comparatively little virulence in the body of the human being unless it has first passed through some organism which is favorable to its growth, and in which its full virulent properties have been developed. Of all the animals that it can infect, the common rat seems to offer the most favorable seat for the development of its virulence, and this animal is an important factor in the transmission and spread of that disease which in modern times has by long odds the greatest proportionate mortality.

It is extraordinary that with the intimate associations which this country has with other countries in which the plague is practically endemic this disease has never gained any material advance upon our shores, and it is interesting to notice some of the efficacious preventive measures which have been introduced in this and other countries to prevent rats from bringing the disease on shore from an infected ship which has come from parts of the world in which rats are commonly infected with this malady. In New Orleans the hawse-holes of all ships at the city wharves must be packed tight, and disks and funnels placed on hawsers and ropes mooring the vessels, in order to prevent rats from passing from the ship to the shore by means of these hawsers. The funnels must be large enough to prevent a rat from getting around them, and sufficiently strong to be useful. They must also be provided with sharp edges. After dark it is required that the ship shall pull out from the wharf at least 100 feet, and that all hawsers and ropes should be removed. Rat traps also are placed at various portions of the ship. Dead rats are not to be handled with bare hands, and must be burned.

In Honolulu we are informed that measures even more active than these are taken, and that in addition r..ts which have been captured in various districts are submitted periodically to a bacteriological examination in order to determine if any of them have become infected by this disease and are therefore capable of spreading it.

OTHER USES FOR DIPHTHERIA ANTITOXIN.

Careful readers of the THERAPEUTIC GAZETTE have noticed within the last eighteen months a number of instances in which antidiphtheritic serum has been employed with asserted success in other maladies than diphtheria. How it acts under these circumstances we do not understand. Some persons have thought that by its entrance into the body it produces a leucocytosis which in turn is instrumental in developing antitoxins in general; and others have thought that in some way it acts as a stimulant to the protective powers of the body. One of the earliest reports of this kind was of its asserted successful employment in the treatment of asthma. In the original columns of this issue of the GAZETTE there is an article by Dr. Paton, of Australia, in which he claims he has produced excellent results by its employment in various cases of sepsis, and in the *Journal des Praticiens* of December 14, 1901, there is a paper by Landrieux and Legros upon its employment in the treatment of croupous pneumonia. In this malady they follow the recommendations made by Talamon, but they do not seem to be impressed with the success of the method to the extent that he approved it. They treated seventeen cases; ten of them received injections of antidiphtheritic serum, in addition to ordinary therapeutic measures, and two of these died, while the seven that did not receive injections of antitoxin recovered. These results are, of course, too small in number to justify us in reaching any definite conclusion, since croupous pneumonia is a malady which varies very much in different individuals, and this fact is still further emphasized when we remember that in one of the cases reported by these French observers the treatment was not instituted until the malady had been present for eight days, and the entire right lung had become involved. The second patient died apparently from heart clot. The noteworthy effects which they have seen follow after such an injection consist in a considerable fall of temperature, within twenty-four hours after its use. To sum up the results of their observations it may be said that they do not give us very definite results either for or against this method, their paper being simply a contribution to a subject about which a large amount of statistics will have to be collected.

TREATMENT OF HYPERTROPHY OF THE PROSTATE.

Time was, and not long since, that a person afflicted with enlargement of the prostate, with obstructive symptoms, had, as the only means offered for relief, the choice of using the catheter or of submitting to a surgical operation with a mortality greater than fifty per cent. If he chose the catheter, he could be moderately certain of infectious inflammation developing shortly, to be followed by infection of the kidneys, and by death. Though there were some

cases which continued for months, and even for years, in the use of the catheter without any particular precautions against infection, these were the exceptions rather than the rule. It happened, therefore, that when catheter life was once begun it was not likely to be prolonged. This condition of affairs, with the advent of a fuller comprehension of methods by which infection can be avoided, and a perfection of surgical technique, has been materially changed. At the present day a patient suffering from enlarged prostate of sufficient degree to cause retention of urine so pronounced as to give a distressing frequency of micturition may employ a catheter for years without exciting an inflammation so intense as to either interfere with comfort or to shorten life.

In those cases in which repeated catheterization in spite of modern precautions causes a distressing, and even a dangerous, degree of inflammation, there are open to the patient a choice of operations, each one of which may be curative, and all of which, when performed before the kidneys are materially affected, are attended by a comparatively slight mortality.

In the employment of systematic catheterization, perhaps the matter of cardinal importance is the use of a catheter before the bladder becomes greatly distended, and therefore vulnerable, from chronic congestion. When a patient has not more than from two to four ounces of residual urine, which is sterile, which is passed without pain or undue discomfort, which also does not get him up more than once a night, catheterization may well give place to internal treatment directed toward making the urine antiseptic, and to increasing the general circulatory tone. Of the drugs useful for this purpose, salol, urotropin, ergot, strophanthus, sandalwood oil, and saw palmetto are most serviceable. For increased frequency of urination hyoscyamine sulphate will be found useful. When the retention reaches such a degree that the bladder is distinctly distended, even after micturition, this can be detected by a bimanual examination, a finger of the right hand being introduced into the rectum, while the left hand presses into the suprapubic region, intermittent catheterization is absolutely indicated, even though the frequency of micturition is not so great as to be harassing. Under these circumstances, a soft-rubber catheter is the instrument of choice. The particular form of the catheter to be chosen is that which can be introduced into the bladder most easily and with least distress. A soft-rubber, elbowed catheter will usually be found to best fulfil these conditions. These catheters should be boiled before being used, and should be stored in a sterile box containing formaldehyde, the vapor of which prevents them from becoming infected; and they should be introduced only after the patient has washed his hands with soap and water and bichloride solution 1:1000, and has scrubbed the meatus with alcohol. Lubrichondrin forms the best lubricating agent, since, unlike fats, it does not deteriorate the rubber, and is readily washed off in water. The catheter having been introduced as far as the compressor urethræ muscle, the whole anterior urethra should be flushed out with a mild antiseptic solution, preferably boric acid, a drachm to the pint, by means of a fountain syringe. The nozzle of the syringe is introduced into the free end of the catheter. After this flushing the catheter is pushed on into the bladder, and the urine is drawn. This draining of the bladder should be practiced once or twice a day until the patient is able to void urine every two or three hours. When he is unable to void urine, or passes it with great difficulty and in small quantity, the catheterization should be repeated every three hours. When in addition to retention there is infection of the posterior urethra and bladder, irrigation must be practiced each time the urine is drained. When, in spite of intermittent catheterization carefully conducted, the infection seems progressive, the catheterizations are painful, the patient is teased by a constant desire to urinate without the ability to empty the bladder, and particularly when the gastrointestinal disturbances, and perhaps lumbar pains and fever, point to renal inflammation, a speedy death is inevitable unless some more radical measures be undertaken.

Even under these circumstances, however, the patient can again be put in a condition of comparative comfort by continuous catheterization. This consists of introducing a catheter, preferably a soft-elbowed one, to a position just within the vesical sphincter, and tying it there. The end of this catheter is dipped beneath the surface of an antiseptic solution contained in a urinal, and the urine, as it runs into the bladder from the ureters, is at once drained out. At least twice a day the bladder is

thoroughly irrigated with an antiseptic solution, using for this purpose either boric acid a drachm to a pint, permanganate of potassium 1:6000, nargol or protargol 1:6000 running up to 1:1000, or mercurol 1:2000, in a normal salt solution. The urethra should also be flushed twice daily by withdrawing the catheter until its eye lies just beyond the grip of the compressor urethræ muscles. Under this treatment, as a rule, the fever subsides, the pain is lessened and disappears in from one to two weeks. The urine again becomes clear, and intermittent catheterization may again be resumed.

It often happens, however, that there is a prompt recurrence of inflammatory symptoms. This indicates the need of a radical operation designed for the removal of the obstruction. This operation may consist of orchidectomy or vasectomy, both of which measures have been followed by complete cures. They are both performed so rapidly, and are attended by such trifling shock, that they are well designed for cases so enfeebled by kidney degeneration that a more serious operation cannot be contemplated. *Vasectomy* can be performed under cocaine anesthesia without giving the slightest pain or shock. There seems reason to believe, however, that it is not quite as efficacious as complete removal of the testicles. Because of the objections on the part of patients to this latter operation, *vasectomy* as a rule is the operation of choice. Following this operation there often results an atrophy of the prostate so great that the patient is able to micturate naturally and is promptly relieved of his obstructive symptoms. There are many cases, however, in which such relief does not follow; nor can it be predicted beforehand what cases will be benefited and what cases will be unfavorably affected by vasectomy and orchidectomy. In general terms, it is said that the soft, glandular, vascular hypertrophies are most favorably benefited by these procedures.

When orchidectomy or vasectomy has failed, the next radical treatment to be considered is prostatotomy. This may be performed either through the urethra or by a perineal incision, and is known as the Bottini operation, a galvanocautery knife being employed for the section. In the choice of these two operations, the galvanocautery incision through a perineal opening seems safer and more efficient, since when the section has been made through the urethra there have been many recurrences because the incision was too short, and some deaths because the incision was too long. There is no absolute means by which the length of the incision may be gauged. In the perineal operation, the route to the enlarged prostate is more direct. An examination of it can be made fairly complete, and even though the incision be unduly prolonged, drainage is so adequately provided for that lethal results are unlikely.

It is maintained by some that all cases of enlarged prostate are amenable to the Bottini operation. This is not in accord, however, with the experience of many who have tried all methods, and there are some who believe that prostatectomy is more rational, quite as safe, and is much more likely to be followed by a radical cure. As to the mortality of prostatectomy, it has been stated that in healthy patients, not over sixy-five years old, and without marked urinary infection, the mortality is not greater than five to eight per cent.

When prostatectomy is decided on, the gland may be reached either by a suprapubic incision or by one through the perineum. In the suprapubic cut the bladder is opened as for stone. The mucous membrane covering the projecting lip of the prostate just behind the vesical orifice of the urethra is incised with a pair of scissors, and the prostate is enucleated with the finger, which tears out the lobes, often with the use of considerable force. This operation gives no adequate provision for drainage, but with a siphon the bladder can be kept fairly dry. When thus performed, the operation should be supplemented by a perineal urethrotomy. By the perineal method a horseshoe incision is made in front of the rectum. The cut is carried down to the prostate, the rectum being pushed backward and out of the way. The prostate having been reached, its capsule is incised, and the hypertrophied parts are shelled out with the finger. The operation is sometimes easy, sometimes difficult. As a means of bringing the prostate within reach of the perineal finger, suprapubic cystotomy may be performed, the finger of the left hand pushing the prostate down, while the index-finger of the right hand shells out the enlarged gland. Syms has devised a bladder retractor, which consists of a soft-rubber bulb cemented to the end of a strong tube of a caliber 38 French. The membranous

urethra is opened, and the bulb is introduced through this opening into the bladder; it is then distended until it has a diameter of 2½ to 3 inches. The tube is then clamped, and when pulled upon will draw down the bladder. After removing the prostate by a perineal opening, a large drainage tube is introduced into the bladder, and the wound is packed with gauze. Continuous drainage is carried on by siphonage for five or six days, the bladder being regularly irrigated in the meantime. This operation is not easy, and as a matter of fact great care is often necessary to avoid opening the rectum and the urethra during the enucleation of the prostate. None the less, when done by those skilled in such work, the results are extremely good, and the mortality is low. Syms, instead of using a U-shaped cut, employs a simple median cut.

Guiteras performs a suprapubic cystotomy, passes the second finger of the left hand into the bladder, and the index-finger of the right hand into the rectum, and palpates bimanually. He then passes a pair of sharp-pointed curved scissors into the bladder, and thrusts the points through the most prominent part of the gland, or the part just behind the internal meatus, and opens the blades, thus tearing the tissues covering the gland. He then inserts the finger-tip into this tear and works it around between the gland and the capsule, making counter-pressure with the second finger in the rectum. After the gland has been enucleated, he passes the scissors in again and cuts through the floor of the prostatic urethra to prevent the forming of a sac. Then bringing the patient to a lithotomy position, he does an external perineal urethrotomy. He notes that of 152 well reported cases of prostatectomy in which the operation was performed by the suprapubic, the perineal, and the combined methods, there were 25 deaths and 127 recoveries. The recoveries were spoken of as failures in 17 and the successes in 27; the remainder as improved, recovered, or good results.

PREVENTABLE DISEASES IN THE ARMY OF THE UNITED STATES.

Under this title Major Owen contributes an article which may well excite the thoughtful attention not only of the medical fraternity, but also of the entire non-professional community, since in all future wars, as in the war with Spain, the bulk of our armies will be made up of young men taken from every walk of life. In all past wars the proportion of those that died or were permanently disabled from disease was much greater than that of those who were killed or wounded in actual conflict. In the light of modern knowledge the vast majority of this crippling and these deaths can be prevented as absolutely as smallpox can be prevented.

In modern times, except in stress of actual conflict, there is no excuse for any but an occasional sporadic attack of typhoid fever. Every death from these causes could have been avoided during the late war. The epidemic was foreseen, there was full knowledge as to the means of providing against it, but it brought down its victims by the thousands, and in camps so placed that communications were easy, where the water-supply was ample, and where the facilities for preventing the epidemics were at hand. Owen states that from May, 1898, to June, 1899, out of a total death of 5519, diarrhea, dysentery, and typhoid fever claimed 3116, and homicide, suicide, and gunshot wounds, 1020. This is slightly more than three deaths from these well known, preventable diseases, to one of homicide, suicide, and gunshot wounds. These figures include the total casualties of Cuba, Porto Rico, and the Philippines to June, 1899.

The reason why these preventable diseases were not prevented is to a large extent, perhaps almost entirely, due to the fact that all the Medical Department can do in the line of prevention is for its individual members to report errors and to recommend their correction.

It is only a courtesy when the commanding officer listens to his medical officer. He is compelled by regulations to listen, but he is given the expressed right not to carry out the recommendation made by his medical officer for the prevention of disease amongst his men. In other words, he is given, by regulation, control over matters of which he has no adequate knowledge.

The mortality of the Spanish-American war was 28 per 1000 living. The mortality of men in civil life, including the lame, halt, and blind, is about 8 per 1000 living between 20 and 35, the age limit of the armies of the United States. The enlisted soldier of the United States, too, is selected care-

fully from the flower of young American manhood. Young men physically sound between the ages of 20 and 35, with proper sanitary care, should not have a mortality of more than 2 per 1000 per annum. Any excess over this mortality means careless sanitary work, and 28 per 1000 means that the work was badly done in the camps of the late war. More than four-fifths of the diseases and deaths could have been prevented; they were not a military necessity, for no enemy was near. The annual pensions for this war amount to $1,200,000, or the interest on $40,000,000 at three per cent. Fully two-thirds of this could have been saved by avoiding pensions to men disabled by preventable diseases. How much better to have so cared for these men that they could have been returned to the breadwinners of the country.

Testimony given before a commission concerning Camp Alger, Va., and Camp Thomas, Ga., showed that the loss of life in these camps was more than forty times the corresponding loss in the city of Cincinnati, and one hundred times that of the city of New York.

Numerous instances are cited by Owen, showing how completely were the recommendations of the medical officer neglected. He points out the absurdity of confining the work of the medical officer to attendance upon the sick and wounded, and giving the line officer full charge of the sanitary condition of the camp, barracks, and troops. Under such circumstances, as Owen justly says, the most valuable part of a medical officer's knowledge is lost, since his highest function lies in preventing disease rather than in curing it after it has once developed. For comparison, he cites instances where the medical officer not only recommends but controls.

Owen notes that under the present law and regulations, neither the medical officer nor the line officer is responsible for disease, and that neither can be punished. It is his settled conviction that where life is lost through inattention to duty or ignorance of its highest requirements, punishment should follow, and he calls attention to the fact that since the days of the Crimea there has existed a tendency to shift responsibility, with results disastrous to the soldier. Under the present law there is no possibility of fixing responsibility.

It is to be hoped that Owen's communication will not merely keep alive a feeling of resentment which at one time burned high in the community against those, in many cases unknown ones, who were responsible for the selection of sites for camps and for the neglect of proper sanitary precautions, but will bring about legislation so directed that in the future the responsibility may be definitely fixed, and adequate punishment be meted out to those who are incompetent, careless, or ignorant. The two principal causes operative in spreading typhoid fever among the troops were the use of infected water and the diffusion of the germs through the agency of flies. By boiling or filtering, infected water can be made safe. Filters thoroughly practicable are in common use, and could have been easily supplied. Insistence upon their use, and the avoidance of drinking water on the part of the soldier that has not been boiled or filtered until it is known to be free from contamination, are matters of common discipline, dependent upon the line officers. Upon them should fall the responsibility of an attack of fever among their men. The avoidance of disseminating disease through the agency of flies is a comparatively easy matter, and is dependent upon the immediate covering of the excrement with earth or sand. This also is a matter of common discipline, implying latrines and the presence of a shovel and a pile of earth, each soldier using these materials after defecation. The site for camping, the choice of water, supervision over the drains, the choice of food, the decision as to the time and place for drills, the clothing, tentage, bathing, hours for sleeping—all these matters are for medical control, and provided the department be given power to act, instead of the privilege of recommending, it is probable that our next war will show a lower mortality from disease than does the history of the war just ended.

Reports on Therapeutic Progress

SMALLPOX AND VACCINATION.

In the *Journal of the American Medical Association* of December 21, 1901, Dock reaches the following conclusions:

1. Glycerinated lymph properly raised and prepared offers less danger of septic infection than any other kind of vaccine virus, and notwithstanding the disadvantage of slow drying, it is to be preferred to dry points as made at present.

2. The peculiar features of the vaccine vesicle as known since the days of Jenner are due to the specific virus; any marked variation from them must be looked upon as evidence of imperfect protection.

3. Virus that produces an imperfect lesion should not be used, because, though it may induce immunity for a short time, and may even prevent the taking of an active lymph inserted soon after it, it is likely to obscure the real condition of the subject and set up an unfounded feeling of security.

4. A knowledge of the natural history of normal vaccinia is very desirable for the physician.

5. The vaccination histories of all cases of smallpox, varioloid, and chicken-pox should be ascertained and recorded as fully as possible.

6. Makers of vaccine virus should give clear and explicit statements as to the quality of their products. The mere assertion of freedom from pyogenic germs covers only part of the case. Evidence of specific activity, as from use in the human being, should be given. For the makers, the results of variolous inoculations in vaccinated monkeys, as suggested by Copeman, would seem very useful and almost essential to the maintenance of a proper standard.

7. A government station for the making and testing of vaccine virus is highly desirable. This need not interfere with private enterprises, but, properly conducted, would be of great value to the latter.

8. Public vaccinators should be trained for their work, and facilities should be given for others to study the methods and clinical features of vaccination.

BATHS.

A. A. SMITH, in the *Medical Record* of December 7, 1901, gives his opinions of the use of the bath in typhoid fever as follows:

Baths relieve the nervous manifestations, add to the patient's comfort, and probably act as a direct protection to the circulatory and respiratory systems. The form of bath which he prefers, both for hospital and private practice, is that known as the "bed bath." He has used it in his wards for a dozen years, and has found it just as efficacious as the tub bath.

The Bed Bath.—Two woolen blankets, rolled up, are placed at the edge of a rather narrow bed-cot, and over them a large piece of rubber sheeting or a large rubber horse-cover. A pillow is then placed at the head and another at the feet, thus making a trough in which the patient is placed. The bath should be begun at a temperature of 90° F., and the temperature gradually reduced, the rapidity of this reduction being graded according to the degree of discomfort produced. It is rarely necessary or desirable to give the bath at a temperature below 70°. If, after two or three days of treatment with the bath, it is found that the patient does not experience any great discomfort, he is at once put into a bath at a temperature of 75° or 70°. The duration of the bath is about ten minutes, and when concluded the pillow at the feet is removed and the water allowed to flow out into a receptacle. The author found such a bath more convenient and less terrifying to the patient and his relatives than the tub.

Precautions and Contraindications.—As he is of the opinion that a certain amount of temperature is desirable in fevers, his practice is not to reduce it in typhoid fever below 101°. Extreme care should be exercised in using the bath in the third week of typhoid, even if the temperature remains high and the bath seems to afford relief. Rarely does the writer give the bath more than three times in the twenty-four hours in the third week of the disease, and often it is better to give only one bath in this period. Where the patient is advanced in years, special caution is necessary if a bath be used at a temperature below 80°. Here it is often better to resort to sponging, or the use of a wet pack at 80° applied anteriorly from the neck to the knees. He agrees with those who believe that hemorrhage and peritonitis are contraindications.

Constipation.—Dr. Smith says that he favors the giving of calomel once or twice during the first few days of typhoid fever, as it seems to add to the patient's comfort. He does not repeat this mercurial, however; but if constipation is present, he makes use of a mild saline cathartic or of liquid cascara. After the first eight or ten days he does not believe it is wise to give cathartics at all in the treatment of typhoid fever, and hence if constipation continues, he makes use of enemata until the patient has had a practically normal temperature for at least ten days.

Intestinal Antiseptics.—He does not believe intestinal antiseptics accomplish any-

thing in the way of modifying the duration of the disease, but they certainly add to the patient's comfort. He ordinarily employs salol, betanaphthol, or carbolic acid, or else some preparation of creosote.

Intestinal Injections.—He has tried intestinal injections, and has not found that they accomplish much more than adding to the patient's discomfort, and he is inclined to believe that they tend to cause hemorrhage or even intestinal perforation.

Coal-tar Products.—The author does not fear to use the coal-tar products in the first week of typhoid fever, provided they are given in small doses and are guarded by aromatic spirits of ammonia. His personal preference is for phenacetine, given in doses of five grains two or three times a day. He does not use them to reduce temperature, but solely to increase the patient's comfort, and he does not prescribe them after the early part of the second week. Where wakefulness is a troublesome symptom, he has found that ten grains of trional or sulphonal, combined with not more than one-twelfth of a grain of morphine, often gives very restful sleep.

Stimulants.—His own custom is to use alcohol if there be distinct indications for its use. He recognizes as those indications, in an adult, a pulse of 120 or over and feeble, particularly if irregular, intermittent, or variable in its rapidity; brown, dry, and fissured tongue; low muttering delirium. Ordinarily, a case of typhoid fever does not require alcohol until the third week. In alcoholic subjects it must, of course, be pushed more than in others. Of the other heart stimulants, he makes use of strychnine, caffeine, and camphor, his preference for them being in the order named.

Intestinal Hemorrhage.—Dr. Smith does not depend upon any medicament to secure a specific effect in controlling intestinal hemorrhage, but relies upon absolute quiet of the patient and the use of some preparation of opium to check peristalsis. The application of ice to the abdomen, in his opinion, accomplishes no good and possibly favors hemorrhage by driving the blood from the surface to the viscera.

Diet.—The typhoid fever patient should receive water freely—four ounces at a time, six times daily. Bouillon or strained broths, if well salted, would often prove very grateful to the patient. Where milk is very repulsive to the patient, broths can be used with the addition of the whites of several eggs daily. He has not seen any harmful results from such practice. A very common error is to give the typhoid fever patient altogether too much milk. His own custom is to adhere to a practically fluid diet for eight or ten days after the temperature has practically reached the normal, and he considers this of the greatest importance. He has at times tried a more liberal diet, and almost always with disastrous results. He does not believe that diet has the power of itself absolutely to cause a relapse, but recrudescence and disturbance of digestion, and the occurrence of intestinal hemorrhage and even perforation, seems to him to be favored by the too early resumption of a liberal diet.

THE USE OF NORMAL SALT SOLUTION.

Editorially *Medicine* for September, 1901, reminds us that the extraordinary success which has attended the use of saline infusions, and the rapid popularizing of the method, not only among the profession but the laity as well, will result in its being used in many cases in which it is contraindicated, and a few bad results may relegate a valuable method of treatment to unmerited obscurity; from which it will be resurrected to occupy its proper position in therapeutics —useful in certain conditions, but by no means a cure-all. The effect of saline infusions into a vein, in cases of shock accompanied by hemorrhage, is little short of miraculous. The pallid, shrunken, grayish features of the patient assume a more natural aspect, the absent pulse returns, the heart's action steadies, and the general improvement of the patient is so prompt as to be very gratifying. The most important indication in the use of infusion into the vein is that the temperature of the fluid should be equal to that of the blood, or above. If the temperature is below 100°, shock may be distinctly increased. The infusion into the vein, as ordinarily given, is much below the temperature that it should be. If a metal or glass tube is inserted into the vein, it of necessity cannot be very large; the flow of fluid through the rubber tube of the syringe cools it very rapidly, so that with ordinary room temperatures, if the fluid in the bag has a temperature of 105°, it actually enters the circulation of the patient at about 90°. This can be obviated by using one of

the mechanical arrangements for warming the fluid while in the bag, and also while it is in the tube. If an ordinary rubber tube is employed, it may be surrounded with gauze saturated with hot water.

Under no circumstances should an infusion be made directly into a vein unless there has been a loss of blood. If the symptoms of shock are not accompanied by hemorrhage, the injection of the hot normal salt solution should be into the colon or into the subcutaneous cellular tissue. The injection of the colon is probably the most efficient, but here the temperature should be at least from 115° to 125°. [With this we cannot agree. We prefer about 105°.—ED.]

In the treatment of toxemia, saline solution will unquestionably play a most important rôle in the future. If the fluid is injected into a vein, the same rule should be followed, that there must be an extraction of blood. In cases of general sepsis, pneumonia, uremia, and other toxemic states, preceding the injection, there should be a free bleeding of the patient. If the blood is not removed, resort must be had to the hypodermic or the colonic injection.

In cases of emergency an approximately accurate solution can be prepared by adding a teaspoonful of table salt to a pint of water. A much more accurate formula, and one which more nearly represents the saline constituents of the blood, is that proposed by Dr. H. A. Hare, which is composed of the following ingredients:

Calcium chloride, 0.25 gramme;
Potassium chloride, 0.10 gramme;
Sodium chloride, 0.9 gramme;
Sterilized water, 1000 Cc.

This formula is prepared by Messrs. Parke, Davis & Co. in a concentrated solution. When properly diluted with boiled and filtered water it is ready for use.

LA GRIPPE IN CHILDREN.

The *Brooklyn Medical Journal* for October, 1901, has in it an article by CHAPMAN on this interesting topic. He tells us that if the temperature is high, it should be reduced by sponging or the cold pack. But when hydrotherapy is employed, the reduction of temperature should be extremely gradual. Sudden changes are not well borne. Of the internal antipyretics the writer still clings to liquor ammonii acetatis and spiritus etheris nitrosi.

The coal-tar preparations need be mentioned only to be condemned; also aconite and veratrum viride. The low arterial tension is a contraindication to their use. The coal-tar preparations are not simply depressants, but cell destroyers, and the fever and toxin produce sufficient cell disintegration without adding fuel to the fire.

It is true that they reduce temperature and relieve pain, but their benefits are costly to the system. They reduce temperature by lowering the oxidizing powers of the tissue, and they relieve pain by producing cell degeneration in the sensory nerves. In cases treated with the coal-tar preparations the prostration is more marked and convalescence greatly retarded. The writer believes their use should be dropped from the therapeutics of infancy.

The prostration must be met by stimulants, such as whiskey, strychnine, and digitalis. Quinine, camphor, caffeine, and Russian musk are recommended.

The musculoarticular tenderness seems to be relieved best by external heat, as a warm mustard bath, or sponging with warm witch-hazel. Internal anodynes should be withheld if possible.

The child should be well clothed and kept in bed if possible. The temperature of the room should be even and the child guarded against drafts and sudden changes.

For the coryza with frontal headache, warm poultices of poppy-heads or chamomile flowers placed over the nose and frontal sinuses seem to give great relief. If the air-passages are markedly congested, steaming with tinctura benzoini compositus, oil of eucalyptus, menthol, or thymol is useful. If bronchitis is extensive it is best treated by counter-irritation.

Internal medication seems to do little else than to derange the stomach.

For the nervous symptoms, nothing seems more efficient than external heat. If convulsions occur, the hot mustard bath is usually effective. This may be followed by chloral hydrate, ergot, cannabis indica, or cimicifuga. The bromides are too depressing.

In the cases affecting the digestive system, the most important point in the treatment is a careful regulation of the diet. Egg albumen and beef extracts do not seem to be well borne. Barley water and whey or a mixture of both seem to answer best in young infants. In children over six months

of age, Dr. Bartley's modification of cow's milk, with the milk almost entirely siphoned off, is useful. As the acute symptoms subside the food can be strengthened gradually by siphoning off less milk day by day, until the child is able to retain its usual diet. Cold water is craved by most patients and should be freely given.

If the vomiting be persistent, cocaine, creosote, and sherry wine in the following proportions are often useful: cocaine muriate gr. 1-60, creosote minim 1-10, sherry wine minim x, and water enough to make a teaspoonful. This is administered every two hours until vomiting ceases. Calomel in one-tenth-grain doses every hour for the first twelve hours is often useful.

If there is much abdominal tenderness warm applications are soothing. The old-fashioned spice poultice is often grateful.

In the cases of severe toxemia, if the collapse is pronounced, prompt stimulation with the application of external heat is indicated. Irrigation of the colon with normal saline solution at a temperature of 70° is beneficial even if the diagnosis is in doubt as to whether we are dealing with la grippe or autoinfection. In either case it will reduce the temperature, and if it be autoinfection it will remove some of the offending matter. This may be followed by calomel in full doses: from one to three grains to a child of one year of age.

During convalescence, the hypophosphites or phosphoric acid and strychnine are beneficial.

In conclusion, the author believes the best treatment for "grippe in infants" to be: Use as little medication as possible and trust mainly to careful nursing.

THE PLACE OF SYMPHYSEOTOMY AS CONTRASTED WITH CAESARIAN SECTION.

JEWETT writes on this theme in *American Medicine* of September 28, 1901, and reaches the following conclusions:

Symphyseotomy is still a useful operation within a limited range of pelvic contraction.

It is suited to conditions in which only very little additional space is required for delivery.

It is a valuable resource, therefore, in cases in which forceps unexpectedly prove inadequate.

Axis traction forceps with the aid of posture should always be tried before resorting to symphyseotomy.

Its results would be much improved by restricting it to pelves with a conjugate of not less than 7.5 centimeters (3 inches) in simple flattening, or 9 centimeters in general contraction.

Under equally favorable conditions its total mortality should be no greater than that of Cæsarian section.

When the pelvic space permits it should replace the Cæsarian operation in the presence of exhaustion.

It may be elected primarily as an alternative of Cæsarian section when the operator can be assured that the degree of obstruction is well within its safe limit. Here the choice of operation is a matter of individual preference.

Within its proper field symphyseotomy is better than Cæsarian section for an operator of little experience in abdominal surgery.

TREATMENT OF ACCIDENTS UNDER CHLOROFORM.

In the course of an editorial on this subject the *Medical Press* of September 4, 1901, says that the indications for treating such accidents are threefold—to remove the anesthestic-laden air from the lungs, to encourage the flow of blood to the nerve centers, and to stimulate the circulation and respiration. The various methods which are used to attain these ends Mr. Wilson groups into five classes: (1) External reflex respiratory stimulants; (2) direct mechanical or electrical stimulation of the heart; (3) the mechanical performance of natural functions such as artificial respiration; (4) mechanical measures designed to counteract the effects of the failure of the circulation by raising the general blood-pressure; (5) drugs administered to stimulate the depressed nerve centers. Of the first group, the best that can be said is that they do no harm unless persevered in to the detriment of more important measures, and of the second, that they are either impracticable or positively harmful. Faradic stimulation of the precordial area, if any of the current reaches the heart, probably inhibits its action. Acupuncture of the heart is equally useless, and direct manipulation of the heart after opening the heart-chest is a remedy which requires more evidence of its utility before it can be recommended. Mr. Wilson believes that as good, if not better, results can be obtained by

intermittent pressure on the chest wall, accompanied by alternately raising and lowering the patient so as to empty and fill the heart. The difficult question has first to be decided whether the circulatory failure is the result of paralytic dilatation of the heart, or of paralysis of the vasomotor mechanism.

The methods of treatment suitable for each of these cases are absolutely antagonistic, and it is by no means easy to say which is the cause in any given case. It would appear that sudden failure of the circulation, accompanied by pallor of the face and accelerated or gasping respirations, denotes vasomotor paralysis and requires inversion of the patient with pressure on the abdomen. On the other hand, if the dangerous symptoms are preceded by struggling, and the face is suffused with signs of venous engorgement, the patient should be alternately raised to nearly the vertical position in order to empty the heart, and then returned to the horizontal position. Artificial respiration should be systematically persevered in in each case. If there is actual failure of the circulation little that is useful can be done by efforts to raise the blood-pressure by such means as transfusion, etc. The same objection also applies to the use of drugs. Where there is failure of the respiration or circulation the difficulty is to get the drug to the nerve center which it is to stimulate. In those cases in which this can be effected, hypodermic injections of strychnine and the extract of suprarenal capsule, with inhalation of ether, are probably the most useful.

THE UNTOWARD EFFECTS OF ANESTHETICS.

The *New York Medical Journal* in its issue of September 7, 1901, reminds us that it has taken a long time for the profession to realize that to set up complete anesthesia and maintain it for a considerable length of time is a serious matter. Not that we shrink from it now any more than formerly, but we do it with the full consciousness that it is not free from danger; consequently we are more intent on guarding against severe and even troublesome after-effects, and the result is that anesthetization as now conducted is less perilous and less unpleasant than was once the case. We believe that in all our large hospitals the management of anesthetics is as pleasant and safe for the patient as our present knowledge admits of its being, and we believe also that outside of hospital walls the same carefulness is exercised in the great majority of instances; nevertheless, we are quite convinced that there are still too many practitioners who are not sufficiently impressed with the necessity of sparing no pains to promote the patient's safety and comfort. We therefore think it well to call attention to some excellent remarks made at a recent meeting of the Chelsea Clinical Society, London, by Dr. J. Blumfeld, a hospital anesthetist (*Clinical Journal*, Aug. 7).

In the first place, as to vomiting, Dr. Blumfeld remarks that the transitory vomiting that so commonly follows on emergence from the anesthetic condition is more apt to be induced by the use of ether than by chloroform, but the severe and protracted vomiting occasionally met with is essentially of central origin, since it occurs also when the anesthetic is administered by the rectum; nevertheless, its occurrence is favored by an accumulation of material in the stomach, such as mucus which has been swallowed, and, in cases of intestinal obstruction, matter consisting mainly of water, hematin, ferments, and altered blood pigments regurgitated from the intestine. To remove this material, the stomach should be washed out before the anesthetic is administered. Mingling with collections of mucus, milk has a tendency to form a stringy mass which is vomited with difficulty; hence Dr. Blumfeld thinks that milk is not suitable as the first thing to be taken into the stomach after an operation. The "preliminary starvation" to prevent vomiting is sometimes carried too far, especially in the case of infants. A child at the breast should be nursed not more than three hours before an operation; the author has seen serious collapse after circumcision, which he believes was due solely to the fact that the child had not been fed for seven hours. It is well to put a baby to the breast at the end of an hour after it has regained consciousness. Vomiting from anesthetics is much aggravated by moving the patient, especially if he is jolted, and his head is allowed to dangle about; hence, so far as practicable, a patient should occupy during an operation the bed on which he is to lie subsequently.

When a person in a state of collapse is to be operated on, no special preliminary step is necessary if ether is to be used, for that

anesthetic is of itself sufficiently stimulating, but the administration of chloroform should be preceded by a subcutaneous injection of strychnine, and when the patient is under the influence of the chloroform, a pint or more of water at a temperature of 105° F. may be mixed with two ounces of brandy and slowly injected into the rectum. Stupor lasting for weeks has occasionally followed anesthesia, especially when the operation was upon the bladder or the rectum. Insanity, usually of the maniacal type, has occurred in rare instances as a result of either the anesthetic or the operation, and it is very dangerous to anesthetize a person subject to recurring attacks of insanity.

Dr. Blumfeld does not deal with the matter of asphyxia from anesthetics, but passes to a consideration of their occasional visceral effects. Chloroform, he says, is more apt to cause albuminuria than ether is; nevertheless, persons with renal disease already existing are better subjects for chloroform than for ether. Probably the liver is sometimes affected by the anesthetic, for jaundice not infrequently follows an operation, and "biliousness" is common. Chloroform may cause fatty or granular degeneration of the cells of various structures; ether causes such changes less frequently. As for "ether pneumonia," the author does not seem to believe in its existence. When ether affects the lungs, it gives rise to a coarse bronchitis, most commonly in abdominal and breast cases, in which the pain of the wound and the bandaging make it difficult for the patient to cough up mucus. In such cases patients should not be kept flat on the back for a long time, but be propped up and be allowed to turn on to the side even within a few hours after the operation. Many of the cases of so-called "ether pneumonia" are doubtless instances of mild pulmonary embolism, a small portion of the clot formed in a ligated vein becoming detached and being carried through the heart and into the pulmonary circulation. The fear that a patient may "catch" pneumonia from the apparatus used in anesthetization seems to the author groundless, for the vapor of ether is itself germicidal, and a well cleansed facepiece is less likely to harbor germs than the patient's own mouth or the air of the room in which he lies. In very rare instances acute edema of the lungs has been found in persons who had died shortly after taking ether. Occasionally both ether and chloroform give rise to protracted hiccough or yawning. Once in a while epistaxis occurs during the administration of ether, but soon ceases on the withdrawal of the anesthetic.

THE GUAIACOL TREATMENT OF LARYNGEAL TUBERCULOSIS.

In the *Chicago Clinic* for November, 1901, COULTER reminds us that the methods of treatment of laryngeal tuberculosis may be either medical or surgical, or both, as the peculiarities of the case or opinions of the physician indicate. True it is, however, that there are few pathologic conditions presented to the modern laryngologist requiring a finer discretion and judgment in the application of the best means, whether mild or vigorous, surgical or medical. There is so frequently a marked and at the same time important variation in each individual case as to demand a special rule of action.

Iodoform, calomel, guaiacol, lactic acid, chromic acid, perchloride of iron, alcohol, boric acid, salol, carbolic acid, nitrate of silver, menthol, iodol, creolin, benzoin compound, and many others have been used with reported success.

Krause, in 1886, was the first to recommend the local application of lactic acid as a therapeutic measure for laryngeal tuberculosis. Doubtless many cures and no small amount of relief has been afforded by its use, but that it is not an infallible remedy will be freely admitted, as with all others.

The lactic acid is applied, after cleansing the larynx, in as strong a solution as the patient can bear, ranging from twenty to ninety per cent. In many cases, when applying this remedy, guaiacol, or other such heroic treatment, it is necessary to anesthetize the larynx before making the application with a solution of holocaine or cocaine. This treatment is indorsed, perhaps more widely than any other, by laryngologists, and certainly is effective in many cases. Bronner highly commends it, and also advises a free incision into the turgescent tissues; but this latter measure is now so generally condemned by the profession as being poor surgery as to almost invalidate other conclusions of this authority.

Vascher advises the injection of a saturated solution of iodoform in ether, and this method has had many enthusiastic supporters. He also advises with this the

alternative application of a mild solution of guaiacol and menthol in severe cases.

Richard, Spengler, Zinn, Simanowsky, Bayer, Gleitzman, and others speak in the highest terms of paramonochlorophenol, which is either applied after the manner suggested by Krause for lactic acid, or, when practicable, is injected in small doses. Personally, the author has not had the results, from brief trials of this drug, which he had hoped for.

Guaiacol has been one of the most reliable therapeutic agents yet suggested. Donnellan, whose method the writer has followed in general, uses a submucous injection once every four to seven days. Coulter differs with Donnellan only in the strength of the guaiacol solution used, and sometimes in the frequency of the application, and a somewhat weaker one for the injection. He reports the most satisfactory results from a solution double this strength; he has rarely had trouble in beginning with a twenty-per-cent solution of guaiacol as an application, and by treating the patient every other day has had little difficulty in rapidly increasing the strength of the application, so that at the end of ten days or two weeks he could use eighty per cent, or in some cases a full-strength solution. Individual characteristics or circumstances may in some cases contraindicate either so strong a solution or so frequent an application; and also in those cases where the injection method is employed, the applications are alternated and the time between each is slightly more than doubled, inasmuch as the therapeutic, anesthetic, and systemic effects of the injection are much more durable and pronounced than can be the most carefully made local application.

Previous to the application or injection of the guaiacol the mucous surface is cleansed with a warm alkalinizing spray, not too vigorously applied. Then either by spray or swab apply a local anesthetic of holocaine and antipyrin (one per cent of the former and 1½ per cent of latter). If then the guaiacol be immediately applied or injected with care the patient will suffer only a transient burning sensation, of which few of them complain after the first treatment.

The writer has now three cases which have been under this treatment for more than two years; two of them have no apparent infection elsewhere, the third informs him that while looking well he has been gradually losing weight and has constant slight elevation of temperature, but is without hoarseness, cough, or any other symptoms referable to the throat. Two other cases which were under treatment two years ago, and which showed equally good results so far as the throat was concerned, have recently died, one with tubercular involvement of the liver and intestines, and the other from pulmonary tuberculosis.

Several other cases might be referred to with equal satisfaction, but this apparent recovery is yet too recent to be of statistical value. Coulter reports that his percentage of recoveries is not large, but he is convinced from experience that we have no other remedy so frequently or generally satisfactory in its results.

In those cases where it is possible to use the injection method, it seems especially valuable, as the speedy relief which it gives to the dysphagia is always most grateful to the patient. In this respect he finds it preferable to use the lactic acid, which, "especially when associated with the curette, usually aggravates the distressing symptoms of dysphagia."

Donnellan has suggested a form of throat syringe for this injection which has been found very convenient in many cases. The writer believes there are fewer possible objections to the guaiacol than to the lactic acid. The latter will sometimes give a reaction which will irritate the larynx and increase rather than reduce the edema. He reports never having such an experience with even the stronger solutions of guaiacol, either applied or injected.

THE NUTRITIVE VALUE OF ALCOHOL.

Two experienced investigators have lately given to the world their conclusions on the subject of the nutritive value of alcohol, and unfortunately the two conclusions are absolutely contradictory. R. O. Neumann, in the issue of the *Münchener Medicinische Wochenschrift* of July 2, 1901, considers that there can be absolutely no question as to the nutritive value of alcohol, and in his opinion alcohol is a true food. On the other hand, H. J. Beyer, in the *Boston Medical and Surgical Journal* of August 22, 1901, proclaims his conclusion that alcohol has no nutritive value whatever, but on the contrary that it causes an abnormal destruction of the

protoplasmic constituents of the body. He recommends its use only for the sake of its temporary stimulant effect in cases of extreme fatigue. Beyer bases his findings on the experience he had with five battalions of infantry and 2300 coolies maneuvering under a tropical sun in a country infested by malaria, the issue of alcohol having been withheld throughout the duration of the expedition, which lasted five months. The conclusions of Neumann are founded upon the results of certain experiments to which he subjected himself. The results of his experiments were practically the same, demonstrating that alcohol is a true food, although not capable of taking the place of fat in every respect. From an examination of Neumann's experiments it is difficult to deny the albumin-saving property of alcohol, and his views have received full support from some personal experiments carried out by Clopatt, and set forth in the *Scandinavian Archives of Physiology,* Nos. 5 and 6 of this year. It must be clearly understood, however, that although, according to Neumann and Clopatt, alcohol has an alimentary rôle, it must not be recommended for use as such, because it is also a poison when taken in what in ordinary language is termed moderate quantities. There are a sufficient number of scientific arguments against the abuse of alcohol without absolutely denying that alcohol is a food, because, in the face of modern research, this would certainly appear to be proven.—*Medical Press,* Sept. 4, 1901.

PATHOLOGY AND TREATMENT OF MIGRAINE.

In the *Medical Record* of November 16, 1901, THOMSON gives the following advice. He believes that prophylaxis is the main indication in the treatment of this complaint; but for the attacks themselves, when severe, the fluid extract of ergot given in drachm doses with a drachm of elixir cinchona in water, by stomach or by rectum, is the most certain agent to cut the attack short. The patient should lie perfectly still after taking it till all pain passes off, and in some cases the dose may be repeated after two or three hours.

In those who cannot take the ergot without vomiting, he relies on ten grains of lactophenin with two grains of caffeine citrate, repeated every two hours until relief occurs; or fifteen grains of antipyrin, always taken with a teaspoonful of aromatic spirits of ammonia.

Diet is a matter of great importance, because it is believed that in every severe case the red meats should be abstained from altogether, or, at least, never taken at night. In other respects the digestive abilities and inabilities of each patient must be individually studied, as all experienced practitioners well know. Whatever is indigestible for any person is by that person to be avoided, but no special rule for this purpose is found except one, and that is that if any article either of food or of drink is tasted again in an eructation from the stomach, it is a notice from the stomach that it does not want any more of that stuff, and that as a finality.

All nervous functional diseases have their exciting causes as well as their permanent causes. The exciting causes should never be confounded with the permanent causes, as they often are, as if all that we have to do is to prevent them, and then the disease will cease. Now, the commonest exciting cause of migraine is overtaxation of the nervous system, whether by thinking or by feeding, and likewise by undue exertion of the voluntary muscles. On this account migraine belongs to the worrying and restless periods of life and then declines with repose of old age. It has been noted that in cases of persistence of migraine in elderly persons it seems always connected with continuance of causes of mental anxiety and depression. It is in them that we have to fear the development of melancholia, and against that dread malady in turn no better prophylactic is known than the measures for intestinal antisepsis which have been outlined for the treatment of migraine. This may be as follows:

℞ Sodii sulphocarbolat., gr. v;
Potassii permanganat., gr. j;
Betanaphthol, gr. j.
M. Pone in capsulas no. i.
One after meals and at night.

MEAT ALBUMIN IN THE TREATMENT OF TUBERCULOSIS.

FORBES ROSS, in the *British Medical Journal* of October 12, 1901, writes upon this novel theme. He thinks the resistant and combative forces of the patient to the ravages of the disease seem to be more

markedly increased and fortified under a diet of meat albumin, or mixed meat and milk albumin, than under milk alone. Personal practical experience of the results of feeding consumptive patients tends strongly to confirm the experience of others. Meat albumin or myosin albumin can be employed in the raw state as a raw meat juice made from fresh meat and used immediately after preparation. It can be made either by mincing the meat and expressing it, or by the cold extraction process with saline solution. This last can either be used alone as it is, or it can be flavored with port wine, spices, etc. Commercial raw meat juice preparations on the market possess no advantage over the home-made raw meat extract, and have the additional disadvantage of containing only a small percentage of actual albumin, are most expensive, and must necessarily be highly charged with chemical preservatives of more or less harmful nature. All the above methods of administering raw meat juice, home-made and commercial, run the risk of conveying tubercle bacilli from the meat from which they are made; and the meat juices of foreign origin may also contain the spores of anthrax bacilli, if made from meat where the cattle are subject to that disease. On the other hand, meat albumin can also be utilized in a coagulated or cooked condition, and apparently with just as great benefit, judging from practical results. From elaborate experiments made by the writer he believes it can be easily and safely put up in tins, and sterilized ready for use at very small expenditure.

Héricourt and Richet's researches and experiments with raw meat on tuberculous dogs induce them to attach some importance to the rawness of the meat, its action supposedly being due to a somato-antitoxin existing normally in muscle plasma or serum; actually the reason may really be that more albuminoid nutriment was forthcoming for less digestive effort.

Perhaps the contention that muscle serum possesses antitoxic influences has some foundation in fact, as persons of well-marked muscular development are known to be less liable to consumption than others not so well developed muscularly. Consumptive patients of good muscular physique do better than those who are not so fortunate.

Finally, in cases of profound tuberculosis, such as the tuberculous infection of a large serous cavity, as the pleura or peritoneum, the patients, however well developed muscularly, seem to lose their muscular tissue at a rate out of all proportion to that occurring in other diseases. This may be that the muscular tissue is used up in a vain attempt at combating the tuberculous poison. Djvorack and Webber speak of and recommend strongly a meat diet in the treatment of phthisis.

THE TREATMENT OF CHRONIC BRONCHITIS IN THE ELDERLY AND AGED.

HENRY CAMPBELL, in the *British Medical Journal* of October 12, 1901, briefly sums up the chief points of a paper by him on this topic:

In treating chronic bronchitis in those past middle life the toxicity of the blood should be kept as low as possible.

The air breathed should be pure, and nasal breathing insisted on.

The diet should be a bare sufficiency, and alcohol indulged in sparingly, or not at all.

Every ounce of superfluous fat should be got rid of.

The general health should be maintained at the highest possible level.

A vigorous circulation should be maintained.

Every precaution should be taken against breathlessness.

Breathing exercises should be resorted to in order (among other things) to preserve the mobility of the thorax.

TREATMENT OF RINGWORM OF THE SCALP IN INSTITUTIONS.

In the *Journal of the American Medical Association* of November 23, 1901, STELWAGON, in speaking of the treatment of ringworm, asserts that strong remedies must, as a rule, always be used in the treatment of scalp ringworm in institutions. There are cases, it is true, in which the inflammatory element is, at first at least, quite marked, and milder applications are usually demanded. In such cases, indeed, this inflammatory element may be said to be a natural attempt toward casting off the disease. In almost all cases, sooner or later, the strong remedies are to be prescribed.

What are they? In a great measure, one might say that the selection depends upon the habit or the prejudice of the prescriber. Still there is considerable unanimity among those having to do with these chronic cases as to the several remedies possessing greatest value. The author's own experience emphasizes the usefulness of sulphur, naphthol, iodine, chrysarobin, and croton oil. Sulphur and naphthol are most valuable and appropriate for those cases involving a greater part of the scalp; chrysarobin and iodine for circumscribed areas; and croton oil for those patches which have persistently failed to yield to other remedies.

There are certain adjuvant measures which should be mentioned first before taking up the manner of application of the above several remedies. First, the hair of the entire scalp should be kept clipped very short, about one-fourth to half an inch in length. The disease is then more easily watched and any new spots detected in their incipiency and promptly treated. In extensive and extremely obstinate cases it is even desirable to have the scalp shaved every five or six days. The spread of the disease to other parts of the scalp and to other children should be prevented by certain routine measures. With this object in view, the scalp is to be washed daily or every second day with warm water and medicated sapo viridis:

℞ Sulphuris præcipitat., 3j;
Naphthol, gr. xxx;
Saponis viridis, 3j.
M.

The lather should be permitted to remain on for five to ten minutes, as it has in itself, as experimentally shown by Thin, an inhibitory or destructive influence upon the fungus which may be scattered about the parts. If there is fear of taking cold, the scalp may be enveloped with some covering. The lather is thoroughly rinsed off, the parts rubbed dry, and then a general remedial application made, chiefly for the purpose of prevention, to the entire scalp. The following is useful for this purpose:

℞ Sulphuris præcipitat., 3j;
Naphthol, gr. xxx;
Petrolati, 3j.
M.

Or, instead of the salve, a lotion may be used for this general application, consisting of:

℞ Acid. carbol., 3ij;
Resorcini, 3j;
Solut. acidi boric. (saturat.), Oj.
M.

It is possible that the salve is more effectual in preventing the dissemination of the spores, although it is not so agreeable.

A word as to the depilation of the affected areas. This is a measure of some importance, if carefully and repeatedly done, but if the disease is at all extensive or the patient very young, it becomes almost impracticable. As an efficient substitute for this, originally suggested, it is believed, by Dr. A. W. Brayton, and in the author's judgment of superior value, and also possessing therapeutic properties of its own, a good depilatory powder is recommended. The following, if properly and freshly prepared of good materials, will answer the purpose:

℞ Barii sulphidi, 3iij;
Zinci oxidi, 3ijss;
Amyli pulv., 3ijss.
M.

At the time of application enough water is added to this mixed powder to make a paste, which is spread in a layer of the thickness of the back of a table knife on the areas, slightly overlapping the edges; this is to remain on for three to fifteen minutes, according to the character of the hair and the sensitiveness of the skin, or until heat of the skin or a burning sensation is felt. It is then thoroughly washed off, and if it has acted as it should, the hair of the patch, including the stumps, will have been destroyed into the follicles, and possibly to the full depth of the latter. Should there be accidentally much irritation from this, a soothing ointment may be applied for a few hours or a day; as a rule, this is never necessary. The depilatory should be applied every five to ten days, depending upon the rapidity of the regrowth.

As to the remedial applications to the individual areas, the same ointment as above, with double the quantity of sulphur and naphthol, will prove valuable in recent cases, and especially in very young subjects. The following is the formula:

℞ Sulphuris præcipitat., 3ij;
Naphthol, gr. xxx-ix;
Petrolati, 3j.
M.

Occasionally the larger amount of naphthol, in those of extremely sensitive skin,

gives rise to a feeling of considerable burning, and in such cases this ingredient can be reduced in quantity. As a rule, however, the feeling of burning is over in a few minutes, and no active irritation follows. Ordinarily, the best application for the areas in young patients and in recent areas is iodine tincture, containing a small quantity of mercuric iodide:

℞ Hydrarg. iodidi rubri, gr. j-iij;
Tinct. iodini, ʒj.
M.

The writer believes that the value of iodine tincture applications in this disease is much underrated. The preparation is painted on twice daily, two or three coatings at each time, till the parts become somewhat tender or till the film thus formed cracks or begins to loosen. The parts are then anointed with the milder of the above salves, and as soon as the film is detachable it is picked or pulled off. If there is active underlying irritation, which is rarely the case, a mild ointment may be applied for a day or so. According to circumstances, as indicated above, the depilatory powder is again used, and the paintings resumed. This is continued till the new growing hairs show no evidence of fungus, and then the treatment is discontinued, and the patient kept carefully under observation for several weeks. Should signs of the disease again present—if necessary their significance should be confirmed by the microscope—the paints are again resumed; or, if the iodine paintings seem to be slow in bringing about a complete cure, another plan is to be instituted.

Chrysarobin is by far the most valuable application in most of the hospital cases. It must be of the first quality. It is made by various manufacturing chemists, and varies considerably in quality; naturally an efficient preparation is essential for success. It may be used in all cases, but must be employed with great care in patients under the age of three years. In most of the younger patients, in fact, the sulphur naphthol salve or the iodine paintings will suffice to bring about a cure. Chrysarobin is most satisfactorily applied as solution in chloroform:

℞ Chrysarobini, q. s.;
Chloroformi, ʒj.
M. Make a saturated solution.

The areas are painted over with this until well coated with a film of chrysarobin, the chloroform rapidly evaporating. Over this is then painted three or four layers of good collodion. The plain collodion is a little too brittle, and the flexible collodion scarcely compressible enough; a mixture of equal parts is more satisfactory. In eight or ten hours the collodion is again applied. No further application is to be made till the film so formed begins to crack or break away or begins to loosen, which it usually does in two to four or five days. It is usually loosened by the growing hairs beneath. As soon as it becomes detachable it is gently pulled off, and if there is any active irritation beneath a mild ointment may be used for a few hours or a day till this is subdued. If there is any sign of stumps or growing hairs, the depilatory is again to be used, and the paintings with the chrysarobin and collodion resumed. This plan is to be continued, as with the plan with the iodine paintings, till the disease is finally cured. In some instances—but, if used with care, not in many—a mild or moderately severe dermatitis of the surrounding skin may be set up, and under these circumstances it becomes necessary to suspend the remedy temporarily. In rare instances this tendency to dermatitis may repeat itself, the skin of the patient being intolerant to chrysarobin, and it must be set aside and give place to another plan. Such idiosyncrasy is, however, rare. If the patient or attendant is careless, some of the chrysarobin may be carried to the face or eye, and a temporary disturbance of these parts brought about. This rarely happens, however, with the chrysarobin treatment as here advised, as the remedy is kept covered with the collodion film. In addition, it is advisable to have the patient wear a lining of paper, or other material, in the hat, which will admit of frequent washing or destruction.

THE SYMPTOMS AND COMPLICATIONS OF GASTRIC ULCER.

Professor ROBIN, of Paris, gives the following directions in the *Medical Press and Circular* for November, 1901:

Treatment of Pain.—The painful manifestations are of two kinds. Either the pain is continuous or it comes on in acute attacks during digestion, under the influence of the secretion of hydrochloric acid. We notice different forms, such as pyrosis, cramps, or distressing sensations in the epigastrium. Now, of all the causes which excite the pain,

the first in line is the ingestion of food. That is why absolute rest for the stomach is always insisted upon. But the diet cure cannot be continued indefinitely; and when the patient commences to eat he begins to suffer.

What, then, are the means at our disposal to give him relief? The first and the simplest is for the patient to take, five minutes before each meal, four drops of

Picrotoxin,
Hydrochlorate of morphine, ää gr. j;
Sulphate of atropine, gr. 1-5;
Ergotine, mins. xx;
Cherry laurel water, f3iij.

(A little spirit should be employed to dissolve the picrotoxin, which is not very soluble.)

The dose may be increased, but should not exceed twenty drops in any one day.

This mixture dulls the sensitiveness of the stomach toward the irritating contact of the milk or solid food. It will, however, sometimes happen that the pain is not relieved in spite of this prophylactic treatment; in such cases the best plan is to administer a powder which will neutralize the excess of acid, which is the immediate cause of the pain. The following is the formula which the author employs:

Lactose, grs. xx;
Calcined magnesia, grs. xxx;
Subnitrate of bismuth,
Prepared chalk, ää grs. x;
Codeine, gr. 1-10;
Bicarbonate of soda, grs. xx.

For one powder. To be taken by the patient in a little water when in pain.

If this does not prove successful, use a preparation of cocaine, as follows:

Cocaine,
Codeine, ää gr. j;
Spirit of chloroform, 3ij;
Lime water, ʒvij.

To be taken in tablespoonful doses.

External applications are by no means without effect; the following liniment may be employed, for example:

Liniment of belladonna, ʒjss;
Extract of opium,
Extract of belladonna,
Extract of hyoscyamus, ää 3ss;
Chloroform, 3ij.

This liniment applied to the pit of the stomach often gives excellent results where other treatments fail.

Treatment of Vomiting.—When patients suffer from obstinate vomiting, the first thing to try is the picrotoxin mixture indicated above, as it will often afford relief; if not, apply a small blister to the epigastrium and powder with two grains of opium, or order inhalations of oxygen gas. One or other of these means usually succeeds. In the contrary event, there is only one means of arresting the vomiting, and that is a return to the rest cure.

Treatment of Constipation.—When there is constipation, a very frequent complication with those patients, we must, of course, give laxatives and enemata of warm water. The laxatives to employ are castor oil, calomel (calomel, grs. vj; jalapæ, grs. vj; calcined magnesia, grs. xv) in cachet form, or the following pills:

Cape aloes, 3ss;
Scammony,
Jalap, ää grs. xv;
Extract of hyoscyamus,
Extract of belladonna, ää grs. iij;
Castile soap, q. s.

Divide into fifty pills. One or two of these pills are to be taken at bedtime.

Treatment of Diarrhea.—This condition is rare, for out of fifty-two cases the author has observed but two in which it called for active treatment. He employs with constant success for this complication a plant, to-day forgotten, but unjustly so, for it possesses a real value, not only in the diarrhea of gastric ulcer but in a number of similar cases. The author here refers to the root of the wild strawberry (Euonymus). It is a therapeutic agent long gone out of fashion, and might be ranked among the "simples," but nevertheless Dr. Robin strongly recommends it. The powdered root is given in doses of thirty grains, infused in a little water, and taken after meals. Not being toxic the dose can be safely repeated several times a day.

Treatment of Hemorrhage.—We now come to the treatment of a patient seized with hemorrhage. Place him on his back, recommend absolute immobility, and apply ice over the stomach. The next step is to inject subcutaneously a solution of ergotine into one loin, and a gelatin solution into the other, according to this formula:

Gelatin, pure, 3vj;
Chloride of sodium, 3ij;
Distilled water, ʒxxxv.

Six drachms of this solution is to be injected under the skin. There should be prescribed also the following mixture, which should be taken in doses of a teaspoonful every hour:

Ergotine, 3j;
Gallic acid, gr. x;
Syrup of turpentine, ʒj;
Dill water, ʒiv.

And between each hour a tablespoonful of

Chloride of calcium, ʒj;
Extract of opium, gr. j;
Syrup, ʒj;
Water, ʒiv.

The chloride of calcium has the property of increasing the coagulability of the blood. A copious enema will complete the treatment of this urgent stage.

On the other hand, should the hemorrhage recur, however slightly, the patient must be placed on the absolute rest-cure for a period of nine days at least, and a fortnight at most.

The hemorrhage is generally arrested by the above means, and this is an important point to note at the time when so much is spoken of surgical treatment as a substitute for the medical treatment of gastric ulcer. We will refer to this subject again by and by.

It happens sometimes that the patient, through loss of blood, is seized with syncope, and in such a case we must give injections of ether or normal saline solution. If fever be present we may be certain that some of the blood has passed into the intestine. This constitutes a grave complication, as intoxication may be the result. Should this be the case, give a purgative at once, and the best of them is certainly calomel according to the formula already given. When the hemorrhage is exceedingly abundant, and the life of the patient is in imminent danger, we must not hesitate to perform transfusion, for it has given more than once unhoped-for results.

When all complications have disappeared, and the patient is slowly returning to health, prescribe perchloride of iron internally, not only as a hemostatic agent, but in order to overcome the anemia from which these patients so frequently suffer.

In concluding his remarks on this interesting subject of gastric ulcer and its treatment, the author gives in a few words his opinion as to the value of the radical cure advocated by our surgical colleagues. In the immense majority of cases the medical treatment succeeds, and if we compare the mortality of cases of gastric ulcer treated medically with that of the cases treated by surgical operations, we shall find that the former is markedly lower than the latter. The mortality of medical cases is nine per cent, while that of operated cases is twenty per cent. Consequently, the so-called radical cure should not be advised.

On the other hand, there are complications which require surgical treatment, such as intestinal perforation, subphrenic abscess, cicatricial stenosis of the pylorus, perigastritis in patients obliged to work hard and who cannot obtain the special food necessitated by their condition, and finally, slight but oft-repeated hemorrhages which cannot be controlled by medical treatment.

ON THE COMPARATIVE VALUE OF THE VARIOUS PREPARATIONS OF SILVER IN OPHTHALMIC WORK.

HARTRIDGE, in the *British Medical Journal* of November 2, 1901, has the following to say of nargol: It is a chemical compound of silver and nucleic acid containing ten per cent of silver, and is readily soluble in water, very stable, and is said to possess most of the properties of protargol; it may be used in a five- or ten-per-cent solution. Nargol is supplied as a light-brown powder, forming in solution a brown fluid, which gradually becomes darker on exposure to light. Solutions of the drug cause no pain when introduced into the conjunctival sac, and it is pleasanter to use and less sticky than protargol. In acute contagious ophthalmia the author has used ten-per-cent solutions, and has found them efficacious, cutting short the attack and leading to a rapid cure. It also acts well in suppurative conditions of the lacrimal sac. With regard to purulent ophthalmia, the author's experience of the drug is not sufficient to justify him in forming an opinion. The remedy certainly seems worthy of further trial.

THE TREATMENT OF PNEUMONIA.

DE LANCEY ROCHESTER states in the *Journal of the American Medical Association* of November 9, 1901, that in the treatment of pneumonia a large amount of pure water should be administered so that there may be plenty of fluid to flush the excretory organs. It is best administered in small amounts at short intervals.

Besides food, stimulation is necessary, and among stimulants strychnine and alcohol are the most useful in pneumonia; moreover, the administration of them should not be delayed until failing circulation peremptorily calls for them. As soon as the

diagnosis is made the strychnine should be begun in doses of 0.002 gramme at four- to six-hour intervals as indicated. The interval may be shortened, and the dose increased as symptoms which call for such increase in dose appear. As much as 0.004 gramme every two hours may be given hypodermically with the best results.

Next to strychnine, alcohol is our best stimulant. Nevertheless, in some cases it seems to produce decided cerebral disturbance, particularly in those addicted to its abuse. In such cases ammonium carbonate or aromatic spirits of ammonia is a most useful substitute. These drugs are usually well borne by the stomach if combined with liquor ammonii acetatis and administered in mucilage or milk.

The local treatment of the lung is of importance. A careful physical examination of the chest should be made by the physician at every visit. In this way he can tell when congestion is beginning in any part, and vigorous local treatment will in many cases prevent the further progress of the morbid process. As soon as a portion of the lung is shown by physical examination to be in a state of beginning congestion, the prompt and thorough application of leeches, wet cups or dry cups over the part, will often stay the process there; or if it does not stop it entirely, will delay its progress twenty-four or forty-eight hours and give an opportunity for the clearing up of any previously involved portion of lung. The writer's preference is for leeching or wet cupping. If dry cupping is resorted to, it should be very thorough, the skin and subcutaneous tissue rising up in the cup to as great a height as possible and turning blue or purple while there. The cups should be left on for a half-hour, and the process repeated every four to six hours. The writer has noted, post mortem, the direct anatomical evidence of the local value of this procedure, when thoroughly done. During the intervals between the applications of the cups the chest should be covered with a light woolen jacket. The poultice jacket should be relegated to the dark ages. With ice applications the author has not produced the relief of congestion desired.

If, in spite of these local measures to relieve congestion, the process still persists and we begin to have evidence of overdistention of the right heart, such as increasing cyanosis, the pulse losing its tension and becoming small and sometimes irregular, the liver enlarged, the veins pulsating, and the area of cardiac dulness increasing chiefly to the right, whether a murmur of tricuspid insufficiency is present or not, prompt relief can usually be obtained by the withdrawal of eight, ten, or twelve ounces of blood from the median vein of the forearm. This procedure may be repeated several times if need be in the course of the disease. The procedure is of value both for its local effect in relieving the right heart distention, and also for its general effect in withdrawing a decided amount of toxic material. At this time a little digitalis, given with due regard to its physiological effect, may be of decided value.

After the withdrawal of blood, and in cases in which heart failure is imminent without evidence of right distention, the subcutaneous injection of normal salt solution has on several occasions proven of inestimable value. The use of the salt solution by rectum has also been of value, but of course does not give the prompt result that the hypodermic administration does. Whether the value of the procedure is dependent upon the restoration of bulk to the blood after the relief to the right heart has been obtained, or whether the salt itself is of value, is worthy of investigation, the fact being established that in three cases that have come under observation—in one of them three times—the administration of the salt solution certainly had a marvelous effect in averting an evidently impending death.

If more than one lobe is involved the regular administration of pure oxygen gas at stated times, shortening the interval and prolonging the duration of the administration if cyanosis persists or increases, or if the frequency of breathing progresses to dyspnea, has proven of undoubted value in a number of cases.

In case of sleeplessness and restlessness, chloralamid, chloral, Dover's powder, morphine, and hyoscine hydrobromate are to be recommended in the order named; though with the thorough attention to the relief of toxemia by keeping the bowels and skin active, it is seldom that recourse to hypnotics is necessary.

On the possible complications of pneumonia the author refrains from touching, as that takes him beyond the scope of the subject announced; but he does state that

under the eliminative supporting treatment outlined complications are rare.

A protest is uttered against the treatment of pneumonia by large doses of digitalis in the early stages of the disease as irrational and unscientific, being based on a wrong conception of the nature of the disease.

If our conception of the infectious nature of pneumonia is correct, by the time the chill has taken place the disease is established, and any efforts to jugulate the disease by the use of remedies employed to overcome or prevent pulmonary congestion are most certainly misdirected, for preventing the change in the lung—and it is doubtful if the digitalis treatment can accomplish this—certainly will not overcome the toxemia; two of the most serious cases of pneumonia that have come under observation have had no pulmonary involvement demonstrable by physical signs.

The treatment of pneumonia by the pneumococcus antitoxin is the natural and rational plan from the recognition of the infectious nature of the disease, but so far the attempts to produce a reliable antitoxin serum that will preserve its antitoxic powers have not been entirely successful, and consequently there are very great variations in the reports as to the results obtained by its use. However, improvements are being made, and eventually there is no doubt pneumonia will be put in the same category with diphtheria, which was formerly dreaded and of great mortality, but now, when carefully studied, diagnosed early, and properly treated with large doses of antitoxin, shows 100 per cent of recoveries. Until that time comes, however, we will get our best results by recognizing the essentially toxic nature of the disease and treating it along the eliminative supporting lines here suggested, which may be briefly summarized as follows:

1. The sustaining of the metabolic processes of the individual by the administration of easily digested or predigested foods in small quantities at stated intervals, the administration of large amounts of pure water for eliminative purposes, and the administration of oxygen gas by inhalation whenever the absorbing surface of the pulmonary mucosa is involved to such extent as to interfere with proper metabolic oxygenation.

2. Elimination (*a*) by the liver and bowel through the vigorous use of calomel and salts; (*b*) by the skin through sweats induced by external heat; (*c*) through withdrawal of blood when indicated by right heart distention.

3. Stimulation of heart by strychnine, alcohol, or ammonium carbonate, and in suitable cases by the subcutaneous injection of normal salt solution.

4. The local treatment of the lung by leeching, wet cupping, or dry cupping as indicated.

TO GUARD AGAINST THE BITE OF THE MOSQUITO.

McINTOSH recommends an application for this purpose in the *Medical Record* of November 16, 1901, which he has used for some years when out fishing or hunting in swamps where mosquitoes are prevalent, and in the evenings when sitting out-of-doors, and which he has found to be most excellent and efficient; it is the oil of citronellæ (oil of verbena, Indian melissa oil). It has a very pleasant odor, and is not expensive. The oil should be rubbed into the exposed parts, and repeated occasionally, or the following is quite as efficient:

℞ Oil citronellæ, ʒj;
Alcohol, ʒj.

S.: Apply freely to face, neck, hands, and ankles, to prevent mosquitoes from biting.

This is colored with something to make it slightly green.

TREATMENT OF INOPERABLE CANCER.

As a result of a review of the different remedies for inoperable cancer, COOPER (*West London Medical Journal*, October, 1901) arrives at the following conclusions:

Since some cases have been cured, in cases of inoperable sarcoma, especially in the spindle-cell variety, the patient should have the option of taking Coley's fluid.

In cases of inoperable cancer of the breast in women about forty years old, in whom the menopause has not occurred, oöphorectomy should be proposed, and this treatment may be combined with thyroid feeding.

In cases of inoperable rodent ulcer, and in the superficial malignant ulceration in other parts, the Roentgen rays give a good hope of improvement.

In cases where these methods are declined, or are inapplicable, the internal administration of celandine is worthy of trial, and

when the case appears quite hopeless, morphine should be administered without hesitation.

The parenchymatous injections of acetic acid are also worthy of trial.

PRESENT STATUS OF THE CARCINOMA QUESTION.

The treatment of carcinoma pursued up to the present time, says SENN *(Journal of the American Medical Association,* Sept. 28, 1901), as the physician is still ignorant of the essential etiology and true nature of the affection, has been largely of a palliative, tentative, and empirical nature. The only real advances made have been in its operative treatment.

The experience of centuries and the internal use of innumerable remedies have demonstrated that so far carcinoma has not been materially influenced for the better by the use of arsenic, condurango, turpentine, chelidonium, and the many other drugs administered internally. Direct medication of carcinoma tissue by parenchymatous injections has no influence in retarding or arresting the growth of carcinoma, while the injection of sclerogenic substances into the connective tissue around the border of the tumor appears to restrain the local extension of the disease by impairing the blood-supply to the parenchyma of the tumor. Local applications of any kind, even methyl blue, or formalin, in the treatment of ulcerating carcinoma must be considered at best only in the light of palliative measures. Though treatment with the red-hot iron and chemical caustics has its advocates to-day, the actual cautery and chemical caustics have only a limited field of usefulness in the treatment of open, inoperable carcinoma. They should never be employed in the treatment of closed carcinoma as a substitute for the knife. Treatment by different sera has, without exceptions, yielded only negative results.

The operative treatment of carcinoma has undergone a decided improvement during the last decade. Every surgeon now recognizes the importance of early and radical operations. Heidenhain showed the way to surgeons in following the disease along the pathways of local and regional extension. He was one of the first that, upon scientific and anatomic basis, urged surgeons to perform more radical operations, by following the regional lymphatic channels and glands, and removing them with the organ primarily affected. He insisted that local recurrences are seldom the result of traumatic inoculation, but that they follow in consequence of imperfect removal of the regional metastases. Halsted, one of the first in this country that fully appreciated the teachings of Heidenhain, in his last paper on the operative treatment of carcinoma of the breast makes his operations more radical of late. He almost invariably removes both pectoral muscles and clears out the supraclavicular space, and says in defense of this procedure that in thirty-four per cent of cases of mammary carcinoma it will be found that the disease has extended to this region. He does not consider it necessary to divide the clavicle preliminary to this step of the operation. He begins the dissection at the junction of the internal jugular and subclavian veins, and this point is exposed by a vertical incision along the posterior border of the sternocleidomastoid muscle. He now removes both pectoral muscles, and thinks it probable that he shall come to remove the contents of the anterior mediastinum. Of seventy-six patients operated upon over three years ago, thirty-one are now living, without evidence of local recurrence or metastasis. Of ten patients that died, more than three years after the operation, only one showed local recurrence. Thus, over fifty-two per cent of his patients lived more than three years without either local recurrence or metastasis. Sanderson and others approve of the clearing out of the supraclavicular space when the apex of the axilla is extensively involved, or when the supraclavicular glands are enlarged. In very extensive disease of the axilla, supraclavicular space, and Mohrenheim's fossa, Lane advocates amputation at the shoulder-joint. He argues that in such cases the loss of the arm would in any case result from the dissemination of the disease, consequently we are justified in sacrificing the arm, because we may obtain full recovery with merely the loss of the arm. Senn thinks it doubtful if this suggestion will ever become an accepted practice. The same radical procedures that are now so generally practiced for the removal of a carcinomatous breast are being applied with the same thoroughness to the treatment of other organs. Oöphorectomy for carcinoma, except probably in young cases, Senn thinks is a freak.

As to permanency of operative results,

this cannot be determined in less than ten years after the operation.

A radical operation for carcinoma should never be attempted unless the local conditions and general health of the patient are such as to promise an equivalent of the immediate and remote risks to life and comfort involved by the operation.

If carcinoma is, as there is every reason to believe at this time, the product of an erratic cell proliferation beyond the limits of the influences that preside over and regulate normal tissue growth, it appears rational to search, says Senn, for some remedy that would affect the parenchyma of the tumor in one of two ways: (1) An agent or agencies that would destroy the epithelial cells by causing speedy and early degeneration of the imperfectly developed epithelial cells; (2) the employment of a local or general remedy or remedies possessing the power of converting embryonic into mature epithelial cells.

DIAGNOSIS AND SURGICAL TREATMENT OF CARCINOMATOUS STRICTURE OF THE COLON.

A review of the history of his cases, considering the symptoms that should arouse suspicion of carcinomatous stricture while in the early stage, has led WALSHAM *(Lancet,* Aug. 17, 1901) to attach importance to the following:

1. Indefinite symptoms of abdominal disturbance, such as uneasiness, distention, eructations, constipation—symptoms called by the patient, and often by his physician, *indigestion,* but referable to the stomach and not benefited by ordinary routine treatment.

2. Attacks of pain or spasm referred to the colon, often of daily occurrence, and having no special connection with the time at which food is taken.

3. Nearly always liquid stools, with rarely a formed motion.

4. Slowly progressive loss of weight.

5. Constant desire to defecate.

A physician may say, remarks Walsham, that he is constantly meeting with such symptoms, and finds that they yield to careful dieting, judicious drugging, rest, and change of air and scene; but, nevertheless, Walsham has been greatly struck with the fact that in those cases in which he has taken a careful history, and has rigorously cross-examined the patient, such symptoms have been almost invariably the precursors of the serious attack of obstruction for which he has been called in.

Walsham draws attention to the fact that columnar-celled carcinoma is one of the least malignant of the cancers, and although it may have led to almost complete stenosis of the gut, there may be still no dissemination. Since, he says also, as in other forms of carcinoma, dissemination at length occurs, it is desirable, where the symptoms are present, to make an exploratory incision. If acute obstruction has supervened, the safest course is merely to open the colon above the growth, and to deal with the latter after the acute stage has subsided.

SCLEROGENIC TREATMENT OF CANCER.

That the growth of cancer may sometimes be arrested for long periods by sclerogenic treatment is believed by COUDRAY (quoted in *Medical News,* Aug. 17, 1901). He treated a case of cancer of the breast by injections of a five-per-cent solution of zinc chloride, in November, 1891, and again in March, 1892. The solution was injected not only into the breast itself, but also into and about the axillary lymph-nodes, which were enlarged. Five years later the breast was atrophied, presenting a vague nodule surrounded by adipose tissue. Nine years after the primary injection there was still no return of the tumor. During the past few months a recurrence has been noted. There is now present a scirrhous growth, adherent to the skin, showing a tendency to ulceration, and it is accompanied by enlarged axillary nodes.

The arrest of the disease was due, Coudray believes, to the obliteration of lymphatic spaces and vessels.

SPINAL ANALGESIA.

For the relief of phimosis, inguinal hernia, prolapse of the rectum, genu varum, talipes equinovarus, tuberculous arthritis of knee-joint with contracture of the flexor tendons of the thigh, cystitis and vesical calculus, and cellulitis of the left calf, with a discharging sinus leading to dead bone, BAINBRIDGE (quoted in the *American Journal of Obstetrics,* October, 1901) reports twelve operations on infants and young children during spinal analgesia. He finds that children of all ages stand this method extremely well.

In all cases the ether method of sterilization of cocaine and eucaine was employed. A short, beveled needle having a steel point, the remainder of the needle, down to the shank, constructed of a soft metal, was used to avoid the possible danger of breaking should the patient struggle.

What seemed at the time large doses of cocaine were given, but in only one instance did alarming symptoms occur. In this case it was impossible to say whether the injection was the cause, or the symptoms from which the patient suffered. Usually the full doses of the drug resulted in a more satisfactory analgesia and fewer after-effects. One of the cases reported is the second instance on record of general analgesia.

Bainbridge has found beta-eucaine to be less reliable than cocaine.

TREATMENT OF PRURITUS VULVAE.

SIEBOURG (quoted in the *American Journal of Obstetrics*, October, 1901) has had good results in the treatment of some cases of pruritus vulvæ by subcutaneous local injections of weak solutions of cocaine and carbolic acid. He then attempted to accomplish the same purpose by simple injections of salt solution. He believes that local anesthesia is caused by the pressure of the injected fluid.

PRESENCE OF STONE SHOWN BY SCRATCHES ON WAX-TIPPED CATHETERS.

Catheterization of the ureters with a wax-tipped catheter is the most direct means, says KELLY (*Journal of Obstetrics*, October, 1901), of ascertaining the presence of calculus in the urinary tract. The success of the method depends upon care and skill on the part of the examiner, together with attention to detail in preparing the instrument. The presence of the scratch-marks is the most important feature in diagnosis of calculus by this means, but the method affords valuable confirmatory evidence in other ways. In ureteral calculus the method by dilating the ureter and thus inducing the escape of the stone through the natural channel may obviate the necessity for operation. If all precautions have been taken, the presence of scratch-marks is positive evidence of the existence of calculus; but the abscence of scratch-marks cannot be accepted as proof that no stone exists. The possible presence of a double ureter, with two openings into the bladder, should always be borne in mind.

THE WORSTED TRUSS IN INGUINAL HERNIA.

All the cases of hernia which HUBBARD (*Annals of Surgery*, October, 1901) looked up at the Infants' Hospital, Boston, were given trial with the worsted truss, and in no case where it failed did any other truss succeed.

The worsted truss has certain definite advantages over other forms of truss. It is very cheap, and when soiled can be changed. The soiled one can be washed, and is then ready for use again; this can be repeated several times. When the truss loses its elasticity, however, its usefulness is gone. It can be worn in the bath. It is less likely to irritate the skin than a spring truss.

A half-skein is sufficient for a truss; the other half can be kept in reserve. The child is placed on his back, the half-skein is passed under him and pulled far enough so that the end just reaches the internal ring. The other end is then passed through the loop of this first end and the hernia is reduced. The bunch of worsted made by the looping of one end through the other is adjusted carefully and firmly over the hernial opening, and the free end is then passed under the leg and fastened by a bit of bandage to the part on the back. If the skein is so long that there is a mass of extra worsted in the back where the perineal arm fastens to the horizontal part, a neater and more comfortable truss can be made by rewinding the worsted, making it the proper length. The truss should fit snugly, and should be worn night and day. When it is to be changed, the child should lie down. Occasionally the skin of the groin becomes chafed. This can be guarded against and prevented, in most of the cases, by keeping the parts dry and by changing the worsted as often as it becomes soiled by urine or dejections. The success of the truss depends entirely on the intelligence of the mother and the care with which she carries out her detailed instructions. She must have an ever-watchful eye on the truss, and must readjust it as frequently as it becomes loose.

In seventeen cases observed, truss treatment cured six. In the eleven failures the

truss was tried long enough to prove its inefficiency, and not till then was operation advised. The six cases cured had an average age of forty-nine weeks, the single ages varying from eight weeks to two and one-third years. A truss was worn from six months to two years and two months before it was discarded. The trusses were omitted two months, eight months, one year (two cases), two years, and three years ago, and there has been no recurrence. The eleven cases where operation was advised after a trial of the truss averaged in age two years and seven weeks, the variations being from two months to seven years. The cures happened in much younger children than the failures; of the cures only one was over two years, 16⅔ per cent, and of the failures five, or 45 per cent. One case of recurrence was found. A girl of six years wore a truss for six months, and at the end of two years the hernia began to reappear.

Inguinal hernia in a child of two years or under can probably be cured with a truss, even though at first it seems to hold the rupture only fairly well. In a child of over two years the prognosis as to cure from using a truss is rather poor. If the truss controls the hernia, it should be worn for six to twelve months, according to the age of the child, the size of the hernia, etc., before it is discarded, for fear of recurrence.

PHLEBITIS FOLLOWING ABDOMINAL OPERATIONS.

Four cases of this complication to abdominal section are reported by VANDERVEER (quoted in *Gynecological and Obstetrical Journal,* October, 1901), all of which recovered without permanent trouble.

The cases followed operations for appendicitis, uterine fibroid, ovarian tumor, and tumor of the liver; so that the nature of the operation was not an etiological point. In every case the left leg was the seat of the trouble, and the time of its appearance varied from the fifth to the fifteenth day after the operation. Ether was used as an anesthetic in every case, and the urine was normal. The healing of the abdominal wound was primary and aseptic; there was no prolonged vomiting from anesthesia, and in no case was there a history or evidence of phlegmon either in the pelvis or elsewhere. Autoinfection could be excluded, for thorough emptying of the bowels before the operation, and somewhat promptly afterward, had occurred in all these cases. It is probable that in two of the cases the bandage was tight, which should be considered. The anatomic distribution of the veins upon the left side may have a bearing upon the pathology of these cases. In every case pain was a pronounced symptom, and in two cases was apparently out of all proportion to the lesion. The temperature rose and the pulse became markedly accelerated with the ushering in of the complication. Strauch is inclined to blame ether and the high pelvis position, as he never had encountered this trouble following chloroform narcosis. Its appearance in the left leg he accounted for by the fact that the left leg is more strongly bent during the operation because held in the right hand of the assistant. The etiology is obscure and worthy of study.

The treatment consists of rest, elevation of the limb, free movement of the bowels, anodynes for pain, hypnotics to afford sleep, and diffusible stimulants and tonics as required.

VALUE OF THE X-RAY IN TREATING LUPUS VULGARIS.

After observing several cases of lupus vulgaris, GREENLEAF *(Buffalo Medical Journal,* October, 1901) thinks that the most satisfactory results are obtained by using the *x*-ray. Repair begins almost at once. The danger surrounding the treatment is very small. An important element in the result is dependent on the surroundings and general condition of the patient. Cases that have not been subjected to surgical treatment react rapidly and finally recover, but cases which have received surgical treatment react in a degree of slowness dependent upon the extent of previous surgical interference.

ULTIMATE RESULTS OF TENDON GRAFTING IN INFANTILE PARALYSIS.

The idea of reënforcing the tendons of paralyzed muscles by grafting on to them the displaced tendons of neighboring healthy muscles after severance from their distal insertions belongs to Nicoladoni, who, in 1882, published an account of a case of paralytic talipes calcaneus so treated. WHITE

(British Medical Journal, Sept. 7, 1901) has grafted eleven cases, one of which concerned the extensor muscles of the thumb, while the rest were examples of foot palsy—for the most part of the anterior tibial and peroneal muscular groups. The age of the patients varied from two years up to eighteen years. In all the paralytic condition appeared to have been due to an attack of infantile paralysis, and in all there was not only obvious wasting of the muscles affected, but there was also shortening of the tendo Achillis.

In every instance White followed the method of Nicoladoni, varying the details to suit the requirements of each case. Lengthening the tendo Achillis with the transference of a slip from its outer side to the tendons in front of the ankle formed an essential part of each operation, and in two cases represented the entire operation. The next most frequent procedure was to detach the tibialis posticus from its insertion into the scaphoid bone, and to bring it to the front above the internal malleolus, where it was anchored to the tendon of the extensor proprius pollicis, or to that of the long extensor of the toes. After operation the limb has been kept at rest on a splint for three weeks, and then passive movements and massage have been begun, the foot being still supported in the intervals between massage. Two or three weeks later the patient was allowed to practice active movements of an orderly character.

Of the ten cases, two have been operated on so recently that they are not available for stating results. One case has been lost sight of. Six of the remaining seven are greatly benefited by the operation. In three cases the improvement is so great that it requires an educated eye to detect anything abnormal in their method of walking.

Many causes contribute to the disparity in the results obtained from tendon grafting. Foremost among these must be placed the extent and degree of the paralysis. Generally speaking it is better to defer operation until the age of four years or later.

The operation requires an accurate knowledge of the anatomy and functions of the muscles concerned, and is somewhat tedious to perform, but presents no special difficulty. The tendon of the reënforcing muscle should be cut squarely, and as near to its insertion as possible. It should be of sufficient length to reach the point selected for its insertion into the paralyzed tendon without undue tension, and yet be sufficiently taut to assist in retaining the foot in its improved position. Some surgeons advocate a preliminary rectification of the deformity, but in many instances this cannot be accomplished until the unparalyzed opposing tendo Achillis has been severed, and under any circumstances it can be done quite easily and with the employment of little force at the time of the operation.

For tunneling under the skin, White uses a fine pair of Kocher's artery forceps. A gossamer silkworm suture is passed twice through the end of the reënforcing tendon, and after being lightly tied is seized by the forceps and withdrawn. Gentle traction is next made on the suture, and the tendon is coaxed through the tunnel to its new destination. The paralyzed tendon is now slit longitudinally at the point selected for grafting, and the reënforcing tendon drawn through it and fastened by the silkworm, the ends of which are threaded on fine straight needles which transfix both tendons. The utmost care should be taken to secure firm and neat juncture of the reënforcing and paralyzed tendons, and until good union has resulted it is imperative that the foot should be maintained in the corrected position by a splint or some other mechanical means. Whether a part only or the whole of the reënforcing tendon shall be transferred depends to some extent upon the position and shape of the tendon. It would be almost impracticable to deal with a part of the tendon of the tibialis posticus, whereas the tendo Achillis lends itself admirably to transference of a part of its bulk. Generally speaking, if only a part of a tendon is transferred the remaining part should be lengthened, otherwise it may be impossible to restore the foot to its normal position. The tendons of paralyzed muscles are usually diminutive in size and less tough than normal tendon tissue, and occasionally are difficult to find, owing to distortion of the anatomical landmarks of the region; but, when found, their identity can always be established by pulling on them, and noting the effect produced. If from any reason the desired paralyzed tendon cannot be found, the operator may fall back on Kumik's expedient of attaching the reënforcing tendon to a properly chosen site on the periosteum.

As the operation merely distributes in a more advantageous fashion the unparalyzed

muscular tissue, it is quite obvious that, after even the best possible results have been obtained, the limb must necessarily remain a weak one. On the other hand, the general nutrition of the leg operated on in successful cases is greatly improved by reason of the more active movements the limb is capable of performing.

Tendon grafting, in the opinion of TUBBY *(British Medical Journal,* Sept. 7, 1901), is an operation with a future before it. It must not, however, be employed indiscriminately. It is useless in cases of flail-like joints, where all the muscles are badly affected, and it should not be employed in slight cases of paralytic valgus or varus or in slight equinus, the last being easily remedied by section of the tendo Achillis. It is not an operation for the display of anatomical knowledge nor of mechanical skill in operating, but is one requiring the nicest care in the selection of cases and of the muscles to be employed. There must, also, be careful watching of the results of the operation afterward.

After the operation great persistence is necessary, both in massage and in passive movements, and the patient should be encouraged to use the part.

Of eleven cases of tendon grafting for paralytic talipes performed by Tubby, six have shown good results and five fair results. By "good" is meant that the results had been fully attained and the improvement had become permanent. In no case has failure resulted. The results of the four operations he performed in the forearm for spastic trouble have been good in three and partial in one case.

TREATMENT OF INTUSSUSCEPTION IN CHILDREN.

PITTS *(British Medical Journal,* Sept. 7, 1901) reports that out of 115 cases treated for intussusception at St. Thomas's Hospital since 1897, 105 cases were children under the age of twelve years. There were 36 recoveries; 13 recovered after treatment by inflation and manipulation, and 23 after abdominal section. The average age of the cases cured by inflation was 22 months; 5 of these cases were six months or under. The average age cured by abdominal section was nineteen months, no fewer than 13 being six months of age or under.

During 1898, 1899, and 1900, the uniform practice at the hospital has been primary abdominal section, with 27 deaths and 21 recoveries. The only exception was a child aged seven months, which was treated and cured by water-pressure, the symptoms having existed for twenty-four hours. There appears to be a large increase in the number of cases brought to the hospital during the last few years, but this may be attributed to the fact that physicians diagnose the complaint more frequently than ever before.

Pitts narrated in 1897 his successful experience with seven consecutive cases, but later he had three cases unsuccessful, operated on in the first twenty-four hours; in each of the cases declared or beginning gangrene was found post mortem.

Since 1897, at St. Thomas's Hospital, out of forty-nine cases inflation was tried only once; water was injected and relieved all symptoms; the child was seven months old, and had been ill twenty-four hours. It was found that immediate operation gave the best result. As a rule they were treated either rightly by enemata or wrongly by purgatives before admission. At the present time in these cases the surgeon is called at once, and inflation is never attempted unless the surgeon is prepared to open the abdomen. The most unsatisfactory feature in inflation is the lack of certainty whether the whole of the intussusception has been reduced or not; in the ileocolic and enteric forms it is most improbable that success will be obtained. It is not so very uncommon to have an intussusception of small bowel into small near the cæcum, and then a further intussusception into the cæcum.

In operating on intussusception, Pitt says one cannot help but be struck by the considerable difficulty experienced in the majority of cases in effecting a complete reduction even when the part is manipulated outside of the abdomen. It often requires very careful inspection to make sure whether the residual thickening left is due to edema or to a still unreduced final part of the intussusception or to some complication, such as polypus, inverted Meckel's diverticulum, or even inversion of the appendix.

In performing laparotomy on a young child it is essential that the shock should be minimized by placing the child on a hot-water cushion and by having the extremities covered with cotton-wool and bandaged. The operation must be a rapid one. When the abdomen is much distended and the

position of the tumor is not manifest, it is best to make an incision in the middle line and to take special precautions against the prolapse of small bowel. A distended coil may with advantage be withdrawn, and air and intestinal contents allowed to escape through a small incision; this incision having been closed, the after-examination is rendered comparatively easy. This is a much safer course to adopt than to allow coils of distended and unmanageable gut to remain outside the abdomen during the exploration.

Pitts has arrived at the following conclusions:

1. Try inflation only when the case is seen within a few hours of onset, and is not of a very acute character. In the great majority of hospital cases it is better to open the abdomen at once.

2. Inflation may be tried in certain other cases for the purpose of reducing the main part of the intussusception, and enabling the incision to be made directly over the cæcum.

3. When reduction is found impossible in chronic cases, a resection may be generally done through an incision in the ensheathing bowel.

4. In acute cases, and especially if gangrene is present or the condition of the bowel requires its removal, a wide resection should be undertaken as rapidly as possible, and the ends brought outside the abdomen; continuity should be restored at a subsequent operation.

5. In exceptional cases of enteric intussusception resection and immediate restoration of continuity gives the only chance.

Power relates that during the years 1860 to 1900, 113 cases had been admitted into the wards of St. Bartholomew's Hospital and the Victoria Hospital for Children; 66 of these had died, and 47 recovered. The number of cases admitted directly into the surgical wards and submitted to operation during the ten years ending December 31, 1900, was 65 out of a total of 46,197 surgical cases; 42 of the 65 cases died, and 23 recovered.

Abdominal section was performed in one case where there was no intussusception, and in three cases where the intussusception was overlooked, and was only found post mortem. A schoolboy, aged twelve, recovered after an abdominal section which revealed three intussusceptions, one being at the ileocæcal valve and two in the small intestine. The boy had suffered from symptoms of intussusception for four days. Fifteen of the sixty-five cases had needed excision of the bowel, and only one of these fifteen had recovered. An artificial anus was made in six of these cases; Murphy's button was employed in five; Maunsell's operation was performed twice, and once the intestine was united by circular suture. The case that recovered was that of a girl; Murphy's button was used, and was passed on the ninth day. The girl had been seen by Power five and a half years after the operation. She was in excellent health, had no abdominal symptoms, and the scar was firm and without any tendency to bulge. Power was formerly an advocate for irrigation of the bowel. He now performs an abdominal section at the earliest possible opportunity, reducing the intussusception if possible without bringing the tumor into the wound, though he has no hesitation in making a very large incision and in bringing the intussusception outside the abdominal cavity if there is the least difficulty in reduction. In this way he has had three successful cases within three months, two of these being colo-colic invaginations, and the third a large ileocæcal intussusception, still under Power's care. There was only one case at St. Bartholomew's during the years 1860 to 1876, there were none in the years 1878, 1879, and 1887, while there were nine in 1899, seven in 1893, and six in 1898.

TUBERCULAR DISEASE OF THE SPINE AND HIP, AND EARLY SYMPTOMS OF HIP-JOINT DISEASE; TREATMENT.

In treating Pott's disease, PHELPS *(Buffalo Medical Journal,* September, 1901) finds that, as to bracing, the aluminum corset is the best support that can be made. He suggests its use to take the place of braces required for permanent bracing, and for persons who are desirous at any time of securing a support that combines durability with lightness and comfort. As soon as a case of lateral curvature has been arrested, or the greatest amount of benefit has been derived from treatment, the aluminum corset will then be found a most agreeable permanent support. It is light, durable, is thin, and does not interfere with the form and clothing; it is extensively perforated, and so is the coolest and most agreeable, and it can

be worn during bathing. An ordinary corset weighs from one to two pounds, depending on the size. To prevent cracking and to protect it from perspiration, it is covered with a water-proof enamel applied with heat.

In hip-joint disease the symptoms, speaking generally, occur about in the following order: Limit of motion; deformity, with apparent lengthening or real shortening; limps, atrophy—bone disease; pain in the knee, with absence of knee-joint disease; pain on joint pressure, night cries, in absence of other joint disease; flattening of the buttock, with change in gluteal fold; heat, and swelling.

The treatment of hip-joint disease is divided into the operative and mechanical. In all cases where abscesses are present they should be immediately evacuated. This enables the surgeon to intelligently explore the diseased joint with his finger, and to ascertain to what extent the disease has progressed. If the head of the bone is separated from the neck, it should be removed, together with the great trochanter, and the neck. The acetabulum, if diseased, should be thoroughly curetted, together with any other diseased tissue that may be found in the joint. If only small points of disease are found within the joint, these should be curetted together with whatever diseased tissue exists within the joint, and the cavity washed out with bichloride solution, 1-to-2000. The joint should now be filled with a solution of iodoform and glycerin, one-half of iodoform to four of hot glycerin. After this has been done the patient should be put in bed, with extension in the line of deformity and lateral traction above the knee, amounting to about three pounds. Day by day the limb should be lowered until the deformity is overcome. When the deformity is overcome, the lateral traction fixation splint devised by Phelps should be adjusted, and the patient put on crutches with a high shoe on the well leg. Pus and tubercular material destroy living tissues, and when joints are allowed to macerate for weeks and months in these materials, extensive destruction of the bone will almost surely follow. In many cases extensive cutting of the muscles, tendons, and fascia may be necessary to overcome the deformity. Phelps believes that deformities should be first overcome and all abscesses opened before the mechanical work begins. No case of hip-joint disease, says Phelps, need recover with angular deformity, and to attain this end steps should be taken at the beginning of the treatment to place the limbs parallel. After this the lateral traction fixation splint will prevent the patient from becoming again deformed. Phelps fixes his cases of hip-joint from one to five years without motion, with the lateral traction fixation splint, and in the large series of cases thus treated not one has resulted in bony ankylosis, excepting cases with great destruction of bone; even such have recovered where there was control of the patient. The splint is a bar of steel extending from the foot to the axilla, accurately bent to fit the body. A tracing made on paper by laying the child on it will assist in shaping the bar. A pelvic belt, a thoracic belt, and a steel perineal ring complete the fixation part of the splint. The straps in the foot-piece buckle to adhesive straps attached to the leg, which makes longitudinal traction. The strap lashes the leg to the splint, making lateral traction.

His observations have led Phelps to believe that the most serious element of destruction in hip-joint disease is the trauma and pressure produced by the spasm of the muscle. Fixation of the joint without extension is an impossibility. The successful treatment of the joint must depend upon its absolute immobilization, which can only be produced by proper extension and fixation. The constitutional treatment of the disease amounts to but little independent of mechanical treatment. Mechanics, Phelps thinks, are everything. Extension in a line with the axis of the shaft and deformity alone, in hip-joint disease, is entirely wrong. Extension should be made in a line parallel to the axis of the neck—in other words, two lines of extension —otherwise the idea of extension is not perfectly carried out. Ankylosis of the joint is not produced by immobilization, but by the severity and the character of the inflammation. The long traction hip-splints in general use neither properly extend nor immobilize the joint. Intra-articular pressure results in the destruction of the joint, or ankylosis in a large percentage of cases, as is proved by statistics. The results in hip-joint disease should be as good as those of knee-joint disease, and will be, provided perfect immobilization can be carried out. Patients should never be allowed to step upon any portative apparatus. A high shoe on the well leg and crutches should be insisted on until the patient is cured. Finally,

the angular deformity seen in cured cases should not occur, and such cases are a standing rebuke to the splint and methods employed. In other words, no patient with hip-joint disease need ever recover with angular deformity. In exceptionally neglected cases of dislocation a slight amount of deformity had better be left than resorting to osteotomy.

In treating tubercular and purulent abscesses, Phelps, on the whole, would not think of injecting a joint, if it was extensively diseased, with iodoform and glycerin. He would advise, by all means, simple puncturing and intelligent exploration with the finger. If the abscess cannot be curetted and all the diseased tissues removed, it is better not to incise the abscess extensively. It is better to puncture and to insert a drainage-tube. Phelps would lay down the rule that abscess and sinuses should never be curetted where there is dead bone at the bottom of them. In those large abscesses where the disease cannot be removed, the surgeon should not make a big, denuded surface. Puncture should be made, drainage established, and the abscess cavity should be washed out with a solution of bichloride of mercury, 1-to-2000. In cases where the abscess appears externally, a free incision should be made, and the cavity should be curetted and closed up; primary union of the wound will result. It would be bad practice to put a scoop into a psoas abscess, because the diseased bone is not removed; it is beyond where it can be reached, as a rule. The cavity should be washed out as thoroughly as possible, a drainage-tube should be inserted up to the point of the disease, carrying the tube on the end of a stiff probe up to the diseased vertebræ. After following this line of treatment, Phelps has observed that patients do well. Unless all the diseased tissue can be removed, there should be no curetting. Puncture, wash, and drain. If it is found, on cutting down to a joint, that it is extensively diseased, excision of course may be necessary. In all abscesses of joints that do not show a tendency to absorb and seem to be tubercular, as in cases of joints in which the capsule is ruptured, or the abscess is burrowing, Phelps has freely incised.

After excision is completed, or the abscess has been thoroughly curetted without an excision, the joint should be thoroughly injected with pure carbolic acid, which is allowed to remain in the cavity from one to two minutes, after which the carbolic acid is washed away with pure alcohol, and finally the cavity is washed with a two-per-cent solution of carbolic acid. A glass drainage-tube, as large as the wound will take, is inserted down to the bottom of the cavity. The tube should be just long enough to be flush with the skin, and through it the packing is done, instead of packing the wound as in former practice. This large glass tube acts as a speculum through which at subsequent dressings observations can be made of the condition of the wound and deeper structures. It holds the soft parts away and gives the bone an opportunity to granulate up until the tube is pushed out, when a smaller and shorter tube can be used. Phelps looks upon this use of carbolic acid and the large speculum as one of the most valuable advances made in the treatment of abscesses during the century. Abscesses pointing in Scarpa's triangle should never be opened at that point. An incision should be made along the femur, just below the great trochanter, and carried down to the neck of the bone, where the abscess can be observed at this point. This gives the surgeon an opportunity to use his finger for exploration, and if excision is necessary, his incision is in the right place. Knowing that a child lies upon its back twelve hours out of the twenty-four, it can be readily seen that incision in Scarpa's triangle would not admit of drainage, and burrowing of pus always attends the opening of these abscesses at that point.

Operation is to save years of treatment and suffering, to permit intelligent exploring, to get rid of foreign material by drainage, to avoid amyloid disease of the liver and kidney by infection, to prevent burrowing into important structures, such as the peritoneum, to prevent destruction of bone by maceration which leads to extensive destruction, to remove sequestra if present, and to apply the scientific rules laid down by both the surgeon and the pathologist.

There should be operation when the capsule is ruptured in rapid osteomyelitis with joint destruction; when abscesses appear at points where they must burrow to other tissues and cavities—for instance, an abscess rupturing anteriorly, in hip-joint disease, discharges into the iliacus internus muscle; when there are tense abscesses; when there is dead bone present; when the abscess rapidly increases; when joints are filled with

purulent and tubercular material; and when there is repeated accumulations or multiple abscesses. There should be operation in the cases of feeble children always—in rise of temperature, in case of doubt for diagnostic purposes.

ETHYL CHLORIDE AS A GENERAL ANESTHETIC.

The advantages of chloride of ethyl as a general anesthetic are asserted by MARSHALL *(Liverpool Medico-Chirurgical Journal,* September, 1901) to lie in a heart and pulse quite regular; the short length of time to induce anesthesia, one to two minutes; the duration of the anesthesia, three to five grammes for a narcosis of four minutes; rapid recovery of consciousness, absence of sequelæ; almost complete absence of any excitable stage; the more or less local freezing action, causing remarkably little bleeding, especially in teeth extraction. The drug is also pleasant to the taste, is very portable, and is also much cheaper than nitrous oxide gas.

Marshall's cases comprise forty-six dental cases, with two failures. This is a much greater number of successful cases than occurs in the administration of nitrous oxide. He finds ethyl chloride an extremely suitable anesthetic in cases of tonsillotomy; there is rapid recovery and very little bleeding.

For children this anesthetic seems to be ideal; six of Marshall's cases were under ten years of age. They were under, corneal reflex abolished in all, in less than one minute, from one to six teeth were extracted, and the chair was ready for the next patient in less than two minutes. In about twelve cases not only was the corneal reflex not abolished, but on telling the patient to hold out a hand, he did so while teeth were being extracted. On complete recovery to consciousness, no knowledge of ever having been spoken to was remembered.

Curiously, the drug seems to be as great if not a greater offender than nitrous oxide on the moral system. Marshall in his small number of cases was twice accused of indecent conduct: once by a woman of indecent assault, though her husband was present, and again of indecent proposals and the use of obscene language. He advises not to administer the anesthetic unless witnesses are present at the operation.

RECENT CONCLUSIONS CONCERNING APPENDICITIS.

Based entirely upon his own experience, DAVIS *(Western Medical Review,* Sept. 16, 1901) advises the following procedures in the various forms of appendicitis:

Operation in chronic appendicitis, in one or more severe attacks, or two or more light attacks.

Immediate operation is not imperative in simple cases of appendiceal colic without severe pain, no vomiting, no fever, and no rise of pulse-rate. After the attack is over, the appendix should be removed at once.

Immediate operation should be undertaken in acute attacks seen during the first forty-eight hours, accompanied by persistent vomiting, severe pain, and rigidity of the right rectus abdominis. This operation is advised whether or not there be much fever or rise of pulse-rate.

In the cases of patients seen after the third day of the attack, (1) operation may be postponed until the acute symptoms fully subside, if there is distinct convalescence; (2) immediate operation should be done if there is not convalescence and there is yet amelioration of all the acute symptoms; the operation may be delayed if the patient can be closely watched, and is in suitable surroundings for an immediate operation should there be an exacerbation of the symptoms; (3) operations done at once on patients becoming progressively worse, but not yet moribund or nearly so, will save more patients than can be saved by any other means; (4) moribund patients should be allowed to die without operation.

A LOOP AROUND THE HYOID BONE TO AID NARCOSIS IN LOWER JAW AND MOUTH OPERATIONS, AND IN AFTER-TREATMENT.

Since he lost a patient some years ago from asphyxia by the sinking back of the tongue after extirpation of a half of the lower jaw, FENGER (quoted in *St. Paul Medical Journal,* September, 1901) has allowed a loop of silver wire or silk, passed through the anterior part of the divided bone, to remain. The ends are brought out through the dressing so that it may be pulled upon if dyspnea arises.

In doing the Regnoli-Billroth operation, Fenger advises making traction on the hyoid

bone with a sharp hook. He has demonstrated its value. He makes a small longitudinal incision over the middle of the body of the hyoid bone. By means of an aneurism needle there is passed a loop of silk around the posterior surface of the body over the upper border and out through the wound. A small pad of iodoform gauze is packed in the wound and the loop is tied over it. The ends are left out long enough to permit of manipulation by the operator or assistant. The loop is left in place and attached to the plaster-of-Paris cast, loosely covered with dressing at the field of operation. The loop is allowed to remain three or four days.

SULPHURIC ACID TO REMOVE CERUMINOUS PLUGS.

In dealing with impacted cerumen, says MEIERHOF (quoted in *Medical Review of Reviews*, Sept. 25, 1901), difficulty is at times encountered with the syringe in removing the mass. There is temptation to employ force, with a consequent danger in the sudden removal of the plug, which would damage the tympanic membrane. To aid in removing these plugs, various substances have been employed to soften or to partly dissolve the mass. Alcohol, glycerin, and the various salts of sodium have been used, and also, of late, peroxide of hydrogen. Meierhof has tried all these solvents, but not with the success that he had with undiluted sulphuric ether poured from a small bottle or from a suitable pipette into the external auditory canal. The ether acts in a few seconds, partly dissolving the cerumen from its attachment to the canal, so that with the most gentle syringing the plug is promptly removed. No dizziness or other ill effect has been seen from the use of the ether. If there is any hesitancy to employ pure ether, there is recommended a mixture of equal parts of ether and alcohol.

TORSION OF THE SPERMATIC CORD.

The symptoms, diagnosis, and treatment of torsion of the cord are given in the *Scottish Medical and Surgical Journal* for September, 1901, by DOWDEN.

There are two varieties—a sudden and acute attack, and recurring attacks with or without the eventual onset of an acute degree of torsion. In young children there is the sudden onset of fretfulness, vomiting, and constipation, the last not complete but reacting to laxatives. Flexion of the thigh on the affected side and the presence of a swelling are apparent. The swelling is excessively tender on handling. The swelling may be situated in the region of the inguinal canal, at the external ring or in the scrotum. It is rounded in shape, and varies in size; in the young child it is about the size of a pigeon's egg, but in the adult it may be the size of a small cocoanut. The skin over the swelling may be reddened, and the abdomen is often distended. The temperature is usually raised. On palpation the abdominal walls are usually hard. There may be edema about the swelling, which is tense, elastic, and very tender, while an indistinct sense of lobulation can possibly be made out. The testicle is either absent from the scrotum or the swelling obscures it. No impulse on crying or coughing is communicated to the swelling. In boys about puberty and persons who are older, we have a sudden onset of the pain in the affected testicle. It is accompanied by pain in the lower part of the abdomen, sometimes radiating toward the umbilicus. Vomiting is nearly always present, and sometimes becomes stercoraceous in character.

The two chief conditions for which torsion has been mistaken are strangulated hernia and orchitis. In hernia there is swelling with pain coming on at once or very soon; in torsion there is pain followed by swelling. When torsion happens in a descended testicle, the ring is usually clear and the bowels react to medicine, while the vomiting, if the condition has lasted any time, tends to disappear; rarely does it become stercoraceous. True acute orchitis in children and young lads is of such rarity that when symptoms of orchitis appear the diagnosis may be made of torsion of the cord. From puberty onward there is, of course, the greater possibility of an epididymo-orchitis occurring, due to gonorrhea or spread of other infection from the genito-urinary tract, but here again the onset of the symptoms is slow in comparison with the typical onset seen in cases of torsion. Other conditions that may be mistaken for torsion of the cord are bruise of the testicle, and sudden protrusion through the internal ring of a retained testicle. Septic blocking of the capillaries of the spermatic artery may spread to the pampiniform plexus, and a

true sloughing gangrene of the testis result. Suppuration in a hydrocele of the cord or of the tunica vaginalis, ruptured varicocele, bruise of irreducible omental hernia, adenitis of the horizontal chain of lymphatic glands in the groin—all these as a rule may be easily distinguished from torsion by the sudden manner of onset, and the severity of symptoms seen in the last condition. The chief point is the mode of onset. It is as a rule sudden and marked, with severe local pain, and a rapidly following swelling. The general symptoms are almost invariably those of collapse. There are times when an exploratory operation only can reveal the true state. Recurrent cases are diagnosed by the previous history of the attacks, their sudden appearance, location, and rapid disappearance, with possibly the history of the testicle becoming smaller after these attacks.

If the case is seen in the first few hours, the cord should be untwisted. This is comparatively easy when the testicle has descended, but probably very difficult when undescended. The untwisting should be carried out at first in a direction from within outward, and if this produces increased pain the opposite direction should be tried. As regards the after-treatment, the probability is that in cases where a descended testicle is affected, an operation should be performed to fix the organ firmly in the scrotum. With this object Dowden suggests that a broad strip of visceral tunica vaginalis be removed from the upper attachment of the cord to the lowest point of the testicle, and a corresponding portion of the parietal layer also removed; then the cut edges of the visceral and parietal layer are sewn together with catgut. Adhesions would form between the raw surfaces on the testicle and inner side of the scrotum, while the stitched edges of the visceral and parietal layers of the tunica vaginalis would hold the organ in position. In cases where the testicle is undescended, after an acute attack has been early relieved by untwisting, the operation to be performed would be one of either bringing the testicle down into the scrotum, provided the vas deferens is of the looped variety and sufficiently long to allow of this procedure, or what will much more probably be the case, removal of the organ. In cases where the testicle has been affected for twelve or more hours, or where there have been several attacks with atrophy resulting, the safest procedure is removal of the testicle, taking care in acute cases to make the section of the cord above the thrombosed area, lest it so happen that septic injection of the capillaries spreading to the veins has been a factor in the condition.

CLEFT PALATE AND ITS RELATION TO SPEECH.

The characteristic speech of one having a cleft palate is familiar to all, but its physiology, says MAKUEN *(American Medicine,* Oct. 5, 1901), is not so well understood. The purely vowel sounds are the only ones that can be even approximated when the palate is cleft, and the consonant sounds are generally almost entirely unintelligible and are made with a totally different mechanism.

As surgical measures for the closure of cleft palate are used mainly for the purpose of improving speech, they should be undertaken as early as possible in the first three years of life. These measures, as a rule, give the patient only a little better chance for the development of good speech; and even if there were furnished a perfectly normal palate, the character of the speech would remain almost unchanged, for the patient has never learned to use the natural mechanisms of speech. He has been forced to substitute mechanisms that are inadequate to the requirements. Habits of speech formation are very difficult to change; in fact, they cannot be changed without special aid and instruction.

A perfectly normal palate cannot be made to take the place of a lack of sufficient tissue to close the cleft, and, at the same time, to give a freely movable velum palati. However careful the skilful operator may be in uniting the lateral halves, a considerable tension of the organ must be reckoned on, due to cicatricial contraction. This tension may be relieved to a great extent in the hard palate by lateral incisions along the alveolar ridge at the time of operation, but the difficulty arises in the soft palate, in which the muscles, from long disuse, have become atrophied, and when the edges are coapted and healing has taken place the velum is taut, and its different muscles cannot perform their natural functions. In spite of all that can be done, there always remains greater or less space between the velum palati and the posterior pharyngeal wall, which space has the same effect upon the

voice and the speech as has a perforation of the palate.

To what extent the velum may be made looser and more pendant after operation is the question. The difficult thing during and after the operation is to secure a large enough velum to close the space. If this could be accomplished, the development of improved muscle action could be brought about by means of appropriate exercises.

Makuen presents these measures for the purpose of increasing the size of the velum and giving it greater freedom of action:

Separate the adhesions that often exist between the pillars of the palate on either side, and the remnant of tonsils.

Forcibly stretch the velum with the finger after the division of some of the tense fibers of the palatoglossi and the palatopharyngei muscles.

Train and develop the velum palati muscles by means of both direct and indirect voluntary exercises.

These procedures have resulted in marked improvement of speech when they followed an operation for cleft palate.

METHOD OF PREVENTING TENDER STUMPS AFTER AMPUTATION.

BUNGE *(Centralblatt für Chirurgie,* July 20, 1901) amputated a leg and afterward exhibited the patient, who was able to bear considerable pressure on the end of the stump without inconvenience. The amputation was not performed by any of the osteoplastic methods, Bunge having so operated as to avoid the development of the various complications that cause the stumps to become painful on pressure. The three factors, one or all of which may be operative in causing tender stumps, are: adhesions of the stump and soft parts and the sawn surface of the bone; tender periosteal growths originating in the borders of the sawn ends of the bone incident to the subperiosteal method of amputation; and callus growing from the medullary substance and pressing upon the skin. These complications are avoided by so planning the flaps that the scar of the skin and soft parts does not lie in contact with the sawn surface of the bone; by avoidance of the subperiosteal amputation—that is, by cutting through the periosteum at the point where the saw is applied; and by scooping out the medullary cavity for a distance of three millimeters, thus avoiding the subsequent growth of a projecting callus. Patients operated upon by Bunge according to this method were able to bear their weight on the stump without trouble. Hirsch's experience corroborates Bunge's contention.

PNEUMONIA FOLLOWING LAPAROTOMY.

HENLE *(Centralblatt für Chirurgie,* July 20, 1901) notes that of 1787 laparotomies performed in Mikulicz's clinic, 1890-1891, there were 143 cases of pneumonia, of which 65 terminated in death, giving a morbidity of 8 per cent and a mortality of 3.6 per cent. Of 200 amputations of the breast, there were only two cases of pneumonia, with one death. In struma operations there was 7 per cent of pneumonia, 2 per cent terminating fatally.

Most cases developed on the second day. Many other cases developed on the third or fourth day; few on the first or after the fourth.

Postoperative pneumonia is due to a disposition to infection. The disposition to the disease increases with age; thus, of 100 laparotomies performed on persons between the age of eleven and twenty years, 3.4 per cent suffered from pneumonia, while 27 per cent developed this complication in a small number of persons operated upon over seventy years of age.

The disposition to the disease is also dependent upon circulatory disturbances, arteriosclerosis, and fever. It is also dependent upon the nature of the disease for which laparotomy is required. Gastroenterostomy for the relief of symptoms dependent on carcinoma was followed by 14 per cent of pneumonia, of which 9 per cent died, while a similar operation for benign stenosis gave 9½ per cent of pneumonia, with no cases of death.

The slight influence of general narcosis is shown by Mikulicz, who demonstrates that the number who sicken and die of pneumonia when Schleich's infiltration method is used is greater than when a general narcotic is employed. When operations under local anesthesia can be performed absolutely without pain, they give a less percentage of pneumonia than when performed under a general anesthetic.

The most important predisposing factor in the development of pneumonia is shown by Gerulanos as cold. An experimental investigation with animals demonstrates this.

It was, moreover, proved by clinical experience, since when means were taken to prevent the chilling of the patient the percentage of pneumonia became markedly less. Up to 1898, 8 to 10 per cent of the cases developed pneumonia; in 1899, 6.6 per cent; in 1900, 3.6 per cent; and in the first months of 1901, 2.1 per cent. In the course of 1899 heated operating tables were employed, and copious washings with water were substituted by rubbings with gauze compresses moistened in green soap. The patient was kept in bed during the preliminary cleansing, and every precaution was taken to prevent him from becoming wet. The entire preparation did not last more than five minutes.

As a disposing cause must also be mentioned abdominal tenderness following operation, which limits the breathing and expectoration. A median incision placed high is particularly operative in this respect. In addition, infection is also operative. This may come through the air or by way of the blood. It usually comes through the air. It was found that patients who before operation had been suffering from lesions of the respiratory tract are most inclined to pneumonia. A very common method of infection is doubtless by aspiration of the vomitus, but the severest form of pneumonia and even gangrene may occur in patients who have not vomited at all. Lung diseases are at times hematogenous, the infection being carried from the separate foci elsewhere. This is shown by the fact that a suppurating wound is often complicated by pneumonia. Operation for incarcerated hernia is much more frequently followed by pneumonia than radical operations for reducible hernias. An aseptic radical operation on the appendix has not been followed by pneumonia, though this complication has been frequently found after a simple incision of a perityphlitic abscess.

The therapy of pneumonia is sufficiently obvious. Every precaution must be taken to avoid infection. Aspiration of the stomach contents must be prevented. An operation should not be performed in the course of inflammatory affections of the respiratory tract. It must be seen to that the patient breathes freely and expectorates. Chilling is to be guarded against most carefully. After an operation the patient is given respiratory gymnastics, and told that coughing can do no harm. The bandage about the abdomen should be so loosely applied that the breathing motions are not interfered with. Respiratory gymnastics are particularly important when morphine is administered, since this drug so lessens general sensibility that a helpful cough is suppressed. A point that should not be neglected is keeping the patient warm.

Krönlein notes that in 300 laparotomies he has had only a single pneumonia. He uses only ether or a mixed morphine and ether analgesic. The most important point to be considered is the quality and quantity of the ether. He takes no particular precaution against chilling of the patient, and employs only sterile water.

Kümmell saw forty pneumonias in 1070 cases subject to laparotomy. Twenty-nine died, and eleven were cured. He has the patient's position changed frequently after operation, and gets his patients out of bed as soon as possible.

Stolper believes that fat embolus is an occasional cause of pneumonia. He tells of an old woman in whom, eight hours after a laparotomy for relief of gall-stone obstruction, he found on section fat embolus of the lungs.

PSORIASIS CURED BY THYROID EXTRACT.

TALATZ (quoted in *Boston Medical and Surgical Journal*, Sept. 12, 1901) has had a single case of psoriasis cured by thyroid extract, and recommends the further trial of the drug. In his case the affection had begun in a soldier twenty-two years of age, but six months before he had entered the hospital. The scalp and forehead were considerably affected, the trunk only moderately, while there were very numerous and confluent lesions on the extremities. Treatment was at once begun with Vigier's capsules of thyroid, beginning with two capsules a day (each capsule containing .10 centigramme), up to six capsules at the end of the month. At that time there was pronounced improvement of the skin to be seen. The psoriasis plaques had almost all disappeared at the end of six weeks. He was then taking seven capsules a day, and soon after the medicine was suspended on account of the headache. At the end of a week eight capsules were given, and later the dose was increased to eleven capsules, with some intermissions. An ointment of salicylic acid, calomel, and oxide of zinc was

given to aid in removing pigmented spots of the legs. The patient left the hospital completely well at the end of three months. There were no symptoms of vertigo, tachycardia, vomiting, or chills, and the headache, it is thought, cannot be laid at the door of the medicament. The treatment should be carefully watched by the physician, for it requires a long time to produce its effect.

Reviews.

A Practical Treatise on Materia Medica and Therapeutics. With Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M.D., LL.D. Fifth Edition, Thoroughly Revised.
Philadelphia: The F. A. Davis Co., 1901.

Most of our readers who have been interested in the various editions of Dr. Shoemaker's well known book upon Therapeutics will remember that in the earlier editions he used a classification of remedies which was not alphabetical, but which he believed to be based upon scientific reasoning. In the later editions he has employed the alphabetical arrangement. It will also be recalled that following the publication of the fourth edition, Dr. Shoemaker decided to split his book in half, so to speak, and to publish an edition for students and another edition for practitioners; the former being concise, dealing with the physiological action of drugs and practically not at all with their employment in practical medicine, but including a list of the official and unofficial preparations, the doses, and various other items of interest to the undergraduate student. This first half or the Students' Edition of Dr. Shoemaker's Therapeutics appeared in October, 1900, and now we have presented what we presume is to be considered the Practitioners' Edition, which is almost twice as large as that prepared for students, and which contains practically no description whatever of the physiological action of the various remedies which are described. The volume is characterized by the very large number of quotations from current literature. Almost every page contains six or eight names of persons who have written articles dealing with the therapeutic application of the drug under consideration, and not a few of the pages contain one or more prescriptions illustrating the method which would be employed by that particular writer in his use of the drug.

One of the first things which attracts attention in connection with this volume is the fact that it is a mirror of the practice of practitioners in general, and in no way really represents the therapeutic methods which are carried out by Dr. Shoemaker himself. In other words, it is more in the nature of a compilation than a personal record of methods of treating diseases. While in portions of the book a large review of current therapeutic literature is manifested, in other portions it seems to us that very important matters have been slighted. First, the important question as to the proper or improper use of opium in the treatment of peritonitis, in so far as we can find, is entirely ignored, and the antimalarial influence of quinine is condensed in so few lines as to be almost ignored. In a number of other instances important therapeutic facts of this kind do not receive the attention which we think is due them. On the other hand, it is not to be forgotten that the pages of this practitioners' volume teem with an immense number of suggestions, and that information is given in regard to unusual or rare drugs in addition to that which is provided in regard to those more commonly employed. To those readers who desire to look up the original papers the bibliographical references at the foot of each page will be of interest. This volume therefore may be considered as a reflection of the views of many practitioners in this country and abroad. How the accomplished author finds it possible to successfully carry on his duties as President of the Board of Charities of Philadelphia, and Professor of Therapeutics and Materia Medica and Diseases of the Skin at the Medico-Chirurgical College, and also to care for a large practice, and to do all these things well, we cannot understand, particularly as he has other interests which must consume a considerable portion of his time.

Whatever else may be said of Dr. Shoemaker's book, it can be said truthfully that they are good illustrations of what persistent labor and application can accomplish. Many practitioners will find it a useful reference book in their libraries when they come face to face with cases in which treatment seems to avail them little when pursued along ordinary lines. We do not think that the present volume, which is intended for practitioners, can be used to the exclusion of other works on therapeutics, but we do believe, as we have just said, that it is an excellent book of reference.

STUDIES IN THE PSYCHOLOGY OF SEX AND SEXUAL INVERSION. By Havelock Ellis, L.F.A.
Philadelphia: The F. A. Davis Co., 1901.

It will be remembered that Havelock Ellis has already clashed with the English authorities in the publication of his literary efforts in this direction, it being claimed by a court in England that his work was not of a scientific character and dealt with matters which had better be suppressed. On the other hand, the book has been received by the medical profession in other portions of the world with consideration, and a previous volume of his upon this subject has already been printed by the same publishers in America. We have looked over its pages with considerable interest to determine the desire for which it was written, and whether the scientific information used has justified the publication of the large amount of material which deals with the unfortunate subject of sexual inversion.

The difficulty with books of this kind is that not infrequently they fall into the hands of those who should not peruse them. In all probability, for every single individual who reads them for scientific reasons there are many who peruse them simply and solely because they deal with the bad side of human life. While it is necessary that such books shall exist in order that there may be a record of sexual perversion as well as the perversion of other senses, we wish that there were some way in which it could be done without the book being sold broadcast in the market where it can be purchased by almost any one. Evidently the author has devoted a large amount of time to the collection of the reports of cases which he embodies, and has in his own peculiar way arranged them with the object of proving the theories which he desires to advance. No one can deny that many of the sources of reference are beyond dispute, and in addition that he and many of his correspondents write with an authority that cannot be contradicted in any way. To those who view the lower walks of life, and to those who are in control in jails and workhouses, and in the various institutions where perverts are apt to be confined, the book will no doubt possess great interest. In those who are not connected with such institutions it is evident that it will only engender a pessimistic view of human nature, and be of no benefit otherwise.

A BRIEF MANUAL OF PRESCRIPTION-WRITING IN LATIN OR ENGLISH. For the Use of Physicians, Pharmacists, and Medical and Pharmacal Students. By M. L. Neff, A.M., M.D.
Philadelphia: The F. A. Davis Co., 1901.

This little book is composed of 72 pages of printed matter, and an equal number of pages which are in blank and evidently designed for the record of prescriptions and annotations. In view of the large number of excellent works on prescription-writing which are somewhat more exhaustive in their character than the one before us, we confess that we do not see our way clear to recommend it as a text-book for students or medical men. It is manifestly designed as a short road to the learning of how to write prescriptions, and while many of the lines of advice which it contains are entirely correct, we think that it is somewhat too superficial in its dealing with the subject to justify its existence in the form of an independent volume. On the other hand, there is no doubt whatever that the facts as stated by Dr. Neff are clear. The book provides the information necessary to write a prescription, even if the writer does not know enough of therapeutics to hit the mark at which he is aiming. After all, with the growth of the present excellent fashion of prescribing one or at the most two or three drugs in a prescription, the necessity for the employment of many Latin terms in the proper writing of a prescription has passed by, and a very few rules of prescribing will meet most of the needs of the average doctor.

BULLETIN OF THE LLOYD LIBRARY OF BOTANY, PHARMACY, AND MATERIA MEDICA. Published by J. U. and G. B. Lloyd, Cincinnati, Ohio, 1901. Bulletin No. 2, the Reproduction Series No. 2. The Indian Doctor's Dispensatory, Being Father Smith's Advice Respecting Diseases and Their Cure, by Peter Smith, of the Miami Country.
Cincinnati: Printed by Brown & Looker for the Author, 1812. With a Biography by John Uri Lloyd.

The professions of medicine and pharmacy are now indebted to Dr. Lloyd not only for a most valuable collection of botanical specimens and the publication of information concerning them, but also for several excellent novels which have been reviewed in the THERAPEUTIC GAZETTE, and in addition for the publication of these volumes, which in the particular instance before us presents to the medical man of to-day, who values historical contributions to medicine, much of great interest.

This Bulletin consists in a reprint of a work by Peter Smith which is now entirely out of print, and has been so for many years, and of which perhaps not more than one original copy exists. Dr. Lloyd says in his biography of Dr. Smith: Following the frontiersmen whose footprints were scarcely rubbed out and whose rifles had not yet been banished in the territory embracing the Ohio valley, came a band of men who cleared away the forest, and founded their homes among the stumps. The subject of this sketch may be numbered among these people. He was a typical Puritan and educated, a man of indomitable will, and brave to the utmost degree. His name still lingers in the West, and we occasionally see traces of his methods. In the course of his career Dr. Smith wandered over a very considerable portion of the Eastern United States as we know it to-day, taking his family with him. He finally settled in the neighborhood of Cincinnati, where for a long period he practiced, much to the benefit of his neighbors, often going long distances in order to serve those who were sick and suffering. While he neglected to employ botanical names for the various drugs of which he wrote and which he employed, using instead the common or popular name, it is nevertheless possible to trace many of these substances so that we can clearly understand about the remedies of which he wrote. He was an ardent supporter of cold water as a valuable remedial agent in a number of various conditions, and as Dr. Lloyd says, he was well advanced in thought, as is evidenced by the fact that he pointed out that diseases were due to "insects," and so placed himself in support of the microbe theory by asserting in an extended argument that yellow fever and other insidious and contagious complaints were caused by invisible insects. As indicative of his quaintness we find the title-page of his book reads as follows:

"The Indian Doctor's Dispensatory, being Father Smith's Advice concerning Diseases and their Cure, consisting of a discussion of medicines, simple and compound, showing their virtues and how to apply them. He publishes this book for the benefit of his children and his friends and the public, but more especially to Western part of the United States of America by Peter Smith of the Miami country. Men seldom have wit enough to take care of their health until they lose it, and doctors often don't know how to eat until they have no teeth. 1813."

Again in the author's advertisement of the opening pages he states that he puts the price of $1.00 on this book of advice, well knowing that 75 cents will be enough for the common price of a book of its size. He is conscious that propriety, perspicuity, and brevity will be found marked on every piece, and if so the shorter the better. But those who do not choose to allow him 25 cents for his advice may desist from the purchase. He conceives that these advices are calculated to assist every citizen in the preservation of his health and his recovery if diseased, so that by attending to them he may easily receive thirty, sixty, or even one hundred fold for his dollar.

We wish to congratulate Dr. Lloyd upon the publication of this exceedingly interesting volume, which should add another laurel to those which he has already won in scientific and other fields of labor, and he is to be congratulated upon having preserved for general reading this most interesting relic of the early days of American medicine.

A Treatise on Surgery by American Authors. Edited by Roswell Park, A.M., M.D. Third Edition, Enlarged and Thoroughly Revised. New York and Philadelphia: Lea Bros. & Co.

This admirable work, serviceable alike to the student and practitioner, is of especial value because it has various sections contributed by men whose position and experience entitle them to speak authoritatively, and because the great mass of material thus contributed has been edited into a symmetrical form of about 1400 pages. The space and time devoted to each subject, with few exceptions, are accurately apportioned according to its practical importance. The need of a new edition of this work proves its popularity with the profession. Fresh illustrations, and more of them, and annotations and corrections bring the book up to the most modern standpoint. A particularly serviceable chapter upon blood examination applied to surgery is one of the valuable additions. The subject matter is classified under the heads: Surgical Pathology; Surgical Diseases; Surgical Principles and Methods, and Minor Procedures; Injury and Repair; Surgical Affections of the Tissues and Tissue Systems; and Special or Regional Surgery.

The part of the book devoted to pathology

of surgical diseases is, in the main, contributed by Roswell Park. Lyon has written an interesting chapter on examination of the blood. Fordyce has contributed the chapter on syphilis, and Bellfield has written on gonorrhea and its sequelæ. Treating of toxic antiseptics, Park calls attention to the dangers incident to the use of iodoform and naphthalin. It is to be noted that Parmenter, after describing spinal anesthesia, observes that the dangers from cocaine and cord degeneration will probably prevent a general adoption of this method, and will restrict its use to cases in which general anesthesia is contraindicated.

Nancrede, after several chapters on wounds and processes of repair, deals briefly with the practices of antiseptic and aseptic surgery. Park ably handles the subject of cysts and tumors, while Hardaway discusses surgical diseases of the skin. Many other chapters, all dealing in a modern way with surgical diseases and procedures, are contributed by experienced men, whose teachings are well worth careful study.

A Manual of Surgical Treatment. By W. Watson Cheyne and F. F. Burghard. Volume V: The Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea, and the Intrinsic Diseases of the Nose, Ear, and Larynx. H. Lambert Lack, M.D. (Lond.), F.R.C.S.

Philadelphia and New York: Lea Brothers & Co., 1901.

In the fifth volume of this comprehensive manual the ordinary procedures will be found described in satisfactory detail. The book has, however, at times a certain quaint adherence to older procedures; thus it describes and illustrates a method of applying pressure to a hematoma of the scalp that is scarcely in accordance with modern practice. The treatment of a skin wound of the scalp described as "simple" is thus carried out: "The hair in the immediate vicinity of the wound is clipped away, the scalp shaved for about half an inch around it, vigorously scrubbed, and the cyanide of mercury and zinc paste already alluded to rubbed into the hair around. The wound itself should be scrubbed with strong mixture, and afterwards washed with 1:2000 sublimate solution." The strong mixture referred to is a combination of carbolic acid and bichloride, and the scrubbing is conducted with a good nail-brush.

In considering the treatment of depressed fractures, it is stated that all depressed fractures should be lifted or removed without waiting for cerebral symptoms to supervene. The procedure devised for hydrocephalus is one that is not generally known, though it appears to be extremely simple. The operation is performed as follows:

A flap is turned down and a small opening is made in the skull, usually at the upper and anterior angle of the parietal close to the anterior fontanel. This piece of bone can be readily removed with a trephine or gouge, but in some cases where the fontanel has been exceptionally large the lower angle of the fontanel itself has been opened without removing any bone. The dura mater is exposed, a small incision is made into it about the center of the flap, and a catgut drain, of about a half-dozen threads of fine catgut tied together at each end, and from two to three inches in length, is introduced in the following manner: One end is seized with a pair of sinus forceps and insinuated downward and backward between the brain and the dura mater till about three-quarters of an inch is left projecting from the aperture in the dura mater. The free end of this projecting part is then seized with the sinus forceps and pushed through the brain into the lateral ventricle. The result is that there is a catgut drain extending from the lateral ventricle into the subdural space. The opening in the dura mater is then carefully sutured with catgut and the skin flap reapplied.

As a rule after the operation there is a rapid and marked rise of temperature, even up to 104° or 105° F., but this gradually falls to normal in the course of a week or ten days, and in a very short time signs of diminution in the size of the skull become evident. This diminution goes on steadily to a most striking degree, the skull bones falling in and overlapping one another, and at the base, where the bones cannot fall in to the same extent, a sharp line of rigid bone is usually left. The result in the course of a few weeks is the entire disappearance of the distention of the head and the production of a most curiously deformed small skull.

Much space is devoted in the book to deformities of the face and their correction by plastic operations, but no new procedures are noted. The same may be said in regard to cleft palate; here the more modern methods receive scant attention. In the chapter devoted to affections of the auricular and parotid regions, the many admirable suggestions for the correction of the

deformities found in modern literature are not noted.

The division devoted to intrinsic diseases of the nose, ear, and larynx is particularly to be commended as likely to be thoroughly serviceable to the general practitioner. There does not appear to be here the unfamiliarity with modern literature so marked in other parts of the book.

From the bookmaker's standpoint this work is worthy of high praise. It is admirably arranged, has clear, large type, and is most excellently illustrated. It is, for practical purposes, eminently satisfactory. The only unfavorable criticism that can be made is to the effect that it ignores a few of the teachings and practices that receive indorsement from the majority of the active surgeons of to-day.

HOLDEN'S ANATOMY. A Manual of the Dissection of the Human Body. Edited by John Langton. Seventh Edition. Revised by A. Hewson, M.D. Two Volumes.

Philadelphia: P. Blakiston's Son & Co., 1901.

This is one of the few text-books that have stood the test of time. With certain alterations and additions made needful by the advance of anatomical knowledge and by new methods of study, it has entered its seventh edition as useful and welcome, both to the student and the general practitioner, as the first edition in 1851. The work of revision has been admirably conducted by Dr. Hewson. Perhaps the characteristic to which this work owes its chief value is its systematic and practical arrangement, and its clear, concise descriptions. Many new illustrations have been added, none of them gorgeous in color or intricate in detail, but all helpful to the student and reader, serving the true purpose of all illustrations—that of elucidating the text. The book can be heartily commended. Its defects are only those that are inseparable from an anatomical work of this limited size.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., F.R.C.P. LOND.

A very interesting discussion was held at a recent meeting of the Pathological Society on lymphadenoma in its relation to tuberculosis. It will perhaps be remembered that one of the discussions at the annual meeting of the British Medical Association was devoted to lymphadenoma, but it cannot be said that any enlightenment was derived therefrom. At that meeting there were those who considered lymphadenoma a distinct entity in the category of diseases, but found nothing of a distinctive nature in the morbid histology of the glands, and those who maintained that it was merely one expression of tuberculosis of the lymph glands. It is from this point of view—the determination of a distinctive histological appearance—that the recent discussion of the Pathological Society should prove of especial value. Dr. Andrewes defined lymphadenoma as a progressive enlargement of the lymphatic glands and of the lymphoid tissue of certain viscera, unattended by infiltration of adjacent tissues or by true metastasis, and characterized by definite histological changes in the affected tissues. He enumerated the following histological changes: (1) A simplification of the gland structure, with abolition of any distinction between cortex and medulla, so that the gland tissue becomes homogeneous. (2) A large apparent decrease in the number of lymphocytes. (3) A hyperplasia of the supporting framework of the gland, both of the fibrillar reticulum and of the endothelial cells. The former might lead to fibrosis. The increase in the eosinophile cells is commonly striking, and some of them are usually enlarged to form the well known "lymphadenoma cells." These differ from the giant cells or tubercle in that they are smaller, more rounded, and contain fewer nuclei. The nuclei are also larger, fewer in number, and more deeply stained. (4) The eosinophile cells present in normal glands are often, though not always, increased in lymphadenoma. Dr. Andrewes summarized the essential glandular changes as a diffuse overgrowth of the stroma, with concomitant diminution in the contained lymphocytes, the changes being diffuse and not localized. Butlin laid stress on the clinical distinction of two forms of the disease, according as the glands were soft or hard. Andrewes considered that in the hard form the hyperplasia chiefly affects the fibrillar reticulum of the glands, in the soft form chiefly the endothelial elements. Degenerative changes are uncommon in lymphadenomatous glands, and caseous patches when found are quite likely tuberculous.

Dr. Andrewes's results of animal inocula-

tion serve to confirm the views derived from histological examinations. The material from pure lymphadenomatous glands never produced tuberculosis; where tuberculosis resulted there was always evidence of tuberculous infection in the inoculated material. Andrewes formulated his conclusions as follows: (1) Lymphadenoma is a distinct and separable disease, histologically recognizable, and not due to the action of the tubercle bacillus. (2) There exists a form of tuberculosis of the lymphatic glands clinically indistinguishable from lymphadenoma, but recognizable histologically and bacteriologically. (3) Secondary infection with tubercle is common in lymphadenoma, such infection being either local and trivial, or generalized and dominating the picture. These views were corroborated by cases recorded by Lee Dickinson: in one of these —a typical case of lymphadenoma—the liver was extensively lardaceous. Dickinson attributed this change to the profound cachexia that existed before death. Professor MacFadyean in his extensive experience at the Royal Veterinary College had never come across an instance of lymphadenoma in animals. In cases of doubt it might perhaps be well to use tuberculin for diagnostic purposes.

On the whole the last month has brought with it some increase in the amount of smallpox. At the time of writing there are some six hundred cases under treatment, but when it is remembered that this represents the incidence on some six millions of people, it cannot be considered to have reached the confines of an epidemic. The difficulties in combating its spread are not a little enhanced by the dual method of prophylaxis: one local authority is liable to lean on quarantine rather than efficient vaccination, and another on efficient vaccination rather than on quarantine. This is the inevitable outcome of an optional system of vaccination, of which no one can gauge the actual efficacy. The outbreak has brought to light the fact that the number of medical men with a practical acquaintance with smallpox, such as to enable them to make an early diagnosis, is very small. No doubt this is to some extent due to the modifications under vaccination, but chiefly to the fact that very few medical men have ever seen a case of smallpox, either modified or unmodified. The disease is not treated in the infectious fevers hospitals, at which every student prior to qualification has to serve a period of two or three months' attendance. It is true that arrangements are made by which students may spend a period at the smallpox hospitals, but at a point in their career when time is of much value—a minimum of a fortnight's residence on the spot, sanctified by vaccination as a condition of admission, is apt to be attractive to very, very few. An inherent defect in our present scheme of prophylaxis is provided by the fact that there is no sort of legal obligation on the occupier of a house to give any information, in the event of the appearance of smallpox in the household, to the local sanitary authority. The present outbreak has at any rate been the means of providing some very excellent discussions and papers at the London medical societies. One of these will be found *in extenso* in the *Lancet* of December 21, and is a paper read before the Royal Medical and Chirurgical Society by Dr. Copeman, who will always be memorable as the author of the glycerination of calf-lymph. Of first-rate importance are the observations that have recently been made by him on the relationship of vaccinia to smallpox; these went to show that in all probability cow-pox was derived not from ordinary smallpox, but from the milder inoculated variety. Thus he failed completely to inoculate human smallpox lymph into calves, but the same material was used with invariable success in monkeys. From this intermediate host successful inoculation of calves was invariable, and to complete the chain of evidence this contagion was carried with the fullest success from calves to the human infant. These stages were copiously illustrated to the society by a series of lantern photographs of the monkeys, calves, and inoculated infants.

The figures presented by Dr. MacCombie to the Hunterian Society are a striking vindication of the efficacy of vaccination, being all drawn from smallpox hospital statistics. These show a case mortality in unvaccinated subjects of from forty to fifty per cent, and in vaccinated patients of about eight per cent. In vaccinated subjects, too, there is a distinct relationship between the mortality and the number and quality of vaccination marks. Thus the case-mortality percentage in 11,724 vaccinated subjects is as follows: One good mark, 6.4 per cent; two good marks, 3.7 per cent; three good marks, 3.7 per cent; four or more good marks, 2.7 per cent; one indifferent mark, 16.7 per cent;

two indifferent marks, 11.2 per cent; three indifferent marks, 7.4 per cent; four or more indifferent marks, 4.8 per cent.

MacCombie's statistics based on the actual area of vaccination scar surface are also noteworthy: he takes as the standard of efficient vaccination not less than one-third of a square inch of well foveated surface. His figures are:

	No. of Cases.	No. of Deaths.	Mortality per cent.
Efficiently vaccinated..	1435	36	2.7
Inefficiently vaccinated	4373	378	8.7

In a very extensive experience he had never seen a case of smallpox in a patient who in addition to efficient vaccination showed marks of revaccination as well.

At a recent meeting of the Clinical Society, Stacey Wilson propounded some original views on the subject of compensation in disease of the mitral valve. In mitral incompetence, dilatation of the left ventricle is necessary to insure compensation quite as much as hypertrophy; the degree of dilatation will be that which will relieve the left auricle of the excess it receives by backflow from the ventricle, and the degree of hypertrophy will be that necessary to move this additional volume of blood. Dilatation of the left ventricle would be produced by the momentum of the excess of blood from the enlarged auricle, drawn into the ventricle by the aspiratory force of diastole. Again, the same conditions as compensate the defective working of the ventricle likewise relieve the embarrassment of the auricle, as the increased capacity and aspiratory power of the left ventricle during diastole will take over the excess of blood in the auricle. Consequently in fully compensated mitral regurgitation there is no extra work thrown on the left auricle, no embarrassment of the pulmonary circulation, and no accentuation of the pulmonary second sound. According to this theory of compensation the aortic second sound should be accentuated in proportion to the increased expansile force of the left ventricle, leading to increased elastic recoil in the aorta. Similarly in mitral stenosis the left ventricle increases its aspiratory power in order to facilitate the entry of blood through the narrowed orifice and so establish compensation, which is brought about as follows: The left ventricle contracts with greater force than normal in order that the rebound may be correspondingly increased. This is suggested by the increased loudness of the first sound in mitral stenosis, and also by the not infrequent occurrence of hypertrophy of the left ventricle in mitral stenosis. Again, in mitral stenosis the left ventricle alters its beat, the contraction terminating with greater suddenness and force, with the effect of increasing ventricular recoil; this will account for the sharp and loud end of the first sound characteristic of mitral stenosis. This additional aspiratory force of the left ventricle will relieve the auricle of the increased work entailed by the narrowing of the mitral orifice. Therefore in compensated mitral stenosis, if the narrowing is not very excessive no extra work will be thrown on the right heart, and there will be no engorgement of the lungs. It is difficult to accept the evidence Stacey Wilson puts forward for this, viz., that a pulmonary second sound of normal loudness is found even in severe cases of mitral stenosis; or, indeed, his suggestion that an increased loudness of the aortic second sound exists, if, as we hold, the second sound at the apex is of aortic and not of pulmonary origin.

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

The use of strychnine as a stimulant has not been at all as prevalent in France as in the United States. Of late, however, it has been tried in larger doses, and as much as six or eight milligrammes is injected hypodermically. At a recent meeting of the Academy of Medicine, Dr. Fernet advocated its use in delirium tremens. He declared that opium, sulphonal, or chloral is not so well indicated. The real treatment of this disease consists in isolation, good food, and the use of strychnine. In certain forms of pneumonia, when there is much depression, nothing can produce so startling an effect as strychnine, and in the most severe forms astonishing results may be obtained by its use.

At a meeting held by the Society of Hospital Physicians, on November 29, Dr. Duflocq criticized the statistics furnished by Dr. Chantemesse in his essay on the treatment of typhoid fever by his new serum. Dr. Chantemesse declared that the percentage of deaths at the Tenon Hospital was 31.8 per cent during the last epidemic. This

high figure was due to the fact that Dr. Chantemesse did not include in his statistics the cases which had come in before a certain date and recovered. If statistics were made out in this manner, it would be found that the mortality was only 18.5 per cent, and in Dr. Duflocq's service only 12.12 per cent. It might also be remarked that in Dr. Moizard's service at the Children's Hospital there were eighty-seven cases of typhoid fever this last year, with only one death during convalescence.

Dr. E. Gaucher described the preparation he uses in his treatment of syphilis, which is benzoate of mercury. He first of all used Stoukowenkoff's formula, which consists in a mixture of benzoate of mercury, chloride of sodium, and hydrochloride of cocaine; Then he tried Bretonneau's formula, which contains benzoate of mercury, of sodium, and of cocaine. This preparation is made with some difficulty, on account of the excess of ammonia, so Dr. Gaucher has tried the normal saline solution. The preparation should be newly made, and the druggist must use some benzoate of mercury prepared in the following manner: Oxide of mercury should be treated by nitric acid, heated, then diluted and added to a solution of benzoate of soda. The result should be washed in cold water for seven or eight days. This salt can be kept two months. A one-per-cent solution containing

> Benzoate of mercury, 1 gramme,
> Chloride of sodium, 0.75 gramme,
> Distilled water, 100 grammes,

can be employed, and it causes but slight, if any, pain. The formula indicated above is strongly recommended by Dr. Gaucher, who is one of the leading dermatologists in France.

It seems that quite a number of reforms are to be carried out in the Paris hospitals during the coming year. Henceforth no patient will be allowed to have less than 40 cubic meters of air—an important measure, as there had been a tendency to overcrowd the hospital wards; the hospital must be completely isolated from all the houses around it, and placed preferably in the suburbs; the large wards are to be a thing of the past, there not being more than four to six beds in every room, separated from each other by glass partitions. Special isolation rooms will be furnished for all contagious diseases; consumptives in an advanced stage will be separated from those suffering from the initial lesions; all spittoons will be daily disinfected; the autopsy room will be completely transformed. Moreover, the hygiene of the nurses is to be seen to, and important changes made in the way they are housed and fed. Each patient will be thoroughly washed on entering the hospital, and given a complete change of raiment. All patients who are sufficiently well to do so will be obliged to eat in a special dining-room.

At a recent meeting of the Academy of Sciences, Dr. Mossé described the results he had obtained by giving potatoes to diabetics. He gave them an amount which would furnish them with a proportion of starch equivalent to that which would be absorbed by the use of bread. Glycosuria diminished noticeably, and this new regimen had a tendency to cut short the evolution of the infectious accidents seen in diabetes. It would seem that the quantity of alkaline salts found in potatoes had a certain influence in bringing about this result.

Dr. Martinet has written an article recently in the *Presse Médicale*, in which he insists upon one of the results of acute or chronic bronchitis, which has not been sufficiently indicated nor treated—namely, bronchoplegia. In many forms of bronchitis, and especially in those seen after grippe, there is asthenia of the muscles of the bronchial tubes, and the use of opiates is far from indicated in the later stages. At the second period of bronchitis the use of terpine or a similar preparation is of value; but to produce tonicity of the muscular apparatus of the bronchial tubes, ergotin or strychnine should be employed. The following preparation is recommended by Dr. Martinet:

> Sulphate of strychnine, 0.001 milligramme;
> Ergotin, 0.05 centigramme;
> Sulphate of quinine, 0.10 centigramme.
>
> For one pill. Six to eight pills to be taken daily.

The treatment of sciatica by injections of cocaine is the subject of two theses recently presented before the Faculty of Medicine. The injections should be made, not inside but outside the lumbar dura mater. Thiellement described several cases where good results had been obtained by this treatment.

At a meeting of the Society of Therapeutics, held on December 18, Dr. Vogt spoke of the use of thiocol in the treatment of consumption. This drug, which is orthosulphoguaiacolate of potassium, has a special

action on the fever and the night sweats, which disappear, and the appetite as well as the weight of the patient increases. Even with patients at the second or third period, marked results are obtained. The right dose is four packages of 50 centigrammes daily, to be taken generally at the end of the meal. This preparation should be taken in some sugar and water, as it has a slightly bitter taste.

Quite a discussion has been going on as to the sanitary condition of the Metropolitain, the underground railway in Paris. Complaints had been made about the air being close, there seeming to be no provision for ventilation. An inquiry was made as to these conditions, and it was decided that the quantity of carbonic acid was not excessive. It is, however, quite rational to think that there is something wrong, as one experiences quite a noticeable degree of oppression on entering one of the cars used.

The treatment of tetanus by injections of carbolic acid has been tried recently by Drs. Enriquez and Bauer, and they described the result obtained at a recent meeting of the Medical Society of the Hospitals. The patient, a woman, was suffering from a small suppurating wound of the index finger. Ten days after there were sharp pains in the shoulder and neck, and symptoms of an acute case of tetanus appeared. It seemed to be a bulbar form, as the pulse and temperature varied; there was also dyspnea and vomiting. Large doses of chloral and injections of antitetanic serum were tried without result. A first injection of four cubic centimeters of a 2 per 100 solution of carbolic acid was made, and the next day six cubic centimeters were injected. As there was still no result, the patient was bled, 150 to 200 grammes being removed, and two injections of serum of 200 grammes were made, in which three cubic centimeters of the carbolic acid solution had been diluted. Two days after venesection was stopped, only carbolic acid injections being continued. All contractions disappeared rapidly. The patient, however, had secondary pneumonia and died.

There would seem to be about forty cases on record where carbolic acid injections have given good results.

Dr. Richelot, the well known gynecologist, has been trying in cervical metritis a treatment employed many years ago by Amussat, and which consists in the use of solid sticks of caustic potash. Eight to twelve applications of this preparation are found necessary, the patient remaining in bed one day after each operation. This treatment does not cause atresia, since four cases of pregnancy have been seen by the author. Dr. Doleris remarked that alkalies do not, like acids, cause atresia, but he does not think that when there is any tear the lesion can be cured. Such was also Dr. Pozzi's opinion.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: I have been in active practice for twenty years, and during this time I have had six cases of puerperal convulsions. All six cases recovered—one dying from pneumonia in two weeks after confinement. Norwood's tincture of veratrum viride has been my sheet-anchor. I will give an outline of the treatment of the last patient:

I was called in consultation by Dr. S. A. Poague of our town to see Mrs. Mc. The doctor had been with her five hours, and she had had during these five hours four convulsions. He had given morphine and atropine hypodermically, and chloroform by inhalation, and moved the bowels by enemata of hot salt solution. On my arrival we proceeded at once to bleed her, taking sixteen ounces. Immediately afterward we gave her twelve drops of Norwood's tincture hypodermically. We continued the veratrum in ten-drop doses, giving it hypodermically every two hours until the next day, when she became partially conscious. From that time on we gave ten drops every three hours by the mouth, alternating with teaspoonful doses of cream of tartar. On the evening of the 15th she was delivered of a still-born child, which had been dead probably for a week. At the time of her delivery she had no symptom of convulsions. She had one convulsion after we began the veratrum.

We might be criticized for not hastening delivery, but I notice the best authorities advise treating the eclampsia and letting the delivery alone. My plan has been to proceed to delivery as soon as there is dilatation of the os uteri; in this case there was none whatever.

Very truly yours,

CLINTON, Mo. B. B. BARR.

ALCOHOL AS AN ANTIDOTE TO CARBOLIC ACID.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: In the December issue of the THERAPEUTIC GAZETTE is an article on carbolic acid and its uses and abuses, by Dr. George W. Sargent. I wish to say I am much pleased with the article mentioned, and will give my experience with the acid as a poison. I saw a finger that was burned by carbolic acid, and had it immersed in pure alcohol, with the result of no burn or inflammation following.

In July, 1900, some families moving through the country camped near our little city. In one of the wagons was a four-ounce bottle of carbolic acid. A little boy about three and a half years old got hold of the bottle and drank some of its contents, and spilled a lot of it, burning him from lips to scrotum; his chest and abdomen were whitened by it. I was called, and in a few minutes was at the camp. I found the little fellow in a state of complete collapse, and gave him two drachms of pure alcohol. In a few minutes I gave him a second dose, and in fifteen minutes gave him a third dose. By this time the child began to recover from the collapse. I also had cloths saturated in alcohol and placed on the chest and abdomen. This was about 7 P.M., and recovery was certainly due to the alcohol as nothing else was given. Next morning the little fellow was in camp playing as though nothing had happened, only complaining of a little soreness of scrotum and penis. I gave in all about one and one-half ounces of alcohol, and used about eight drachms externally. I am confident the alcohol antidoted the poison, and I advise my friends who keep carbolic acid about their homes to also keep a good supply of alcohol, as I regard it as ***the antidote.***

J. L. MIZENER, M.D.

SMITHVILLE, MISSOURI.

VACCINATION AND TETANUS.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: I will be greatly obliged to any of your readers who may have had or know of cases of tetanus following vaccination if they will communicate with me concerning them. I am engaged in a critical analysis of such cases in the hope of determining their etiology, and desire to secure all the data possible.

Respectfully yours,

JOSEPH MCFARLAND.

MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

Notes and Queries.

THE CRUELTY OF FOIE GRAS.

The sentimentalists who devote so much energy toward the suppression of experimental scientific research conducted upon the lower animals will find an abundant harvest of absolute wanton cruelty on every hand if they care to look for it. How many antivivisectionists, we wonder, eat foie gras? Do they know that it is made from the diseased livers of geese which are deliberately brought to death's door by treatment that is diabolically cruel? The unfortunate birds are cooped up indoors in boxes so arranged that the head alone can be moved. They are then crammed with a rich diet, which is forced down their gullet. Under these circumstances the liver becomes quickly affected, and in about three months has attained an enormous size from fatty degeneration. The larger the liver the more successful the process. The most valuable livers are those of a green tint; that is to say, fatty livers impregnated with bile pigments. The center of this trade is Strasburg, which sends out annually about $750,000 worth of this delicacy. A recent petition to the civic authorities of London to exclude foie gras from the banquet recently given to the Prince of Wales has excited the liveliest alarm among the merchants of Strasburg, inasmuch as, after Paris, England is their best customer. Three months of forced feeding is required to bring the unfortunate birds to the proper pitch of organic degeneration, so that their livers may tickle the palate of fat gourmands. Of a truth, any antivivisectionist who eats foie gras is committing an act of farcical incongruity. On the one hand he is eating a toothsome morsel procured by a course of prolonged torture practiced upon a harmless domestic fowl, while on the other he is railing at scientific men whose aim in experimentation is the highest conceivable, namely, the alleviation of suffering among mankind. Meanwhile, Strasburg flourishes, and science is tied hand and foot in the United Kingdom.—*Medical Press,* Dec. 11, 1901.